R. Holmes

1959 - 1964

Species Accounts – Part 3

Erolia alpina

Digitized by the Internet Archive
in 2017 with funding from
CLIR

https://archive.org/details/alaskaspeciesacc00holm_1

R. Holmes

1959 - 1964

Species Accounts – Part 3

Erolia alpina

Holmes, R.
1959

Erolia alpina

5 June 1900. - Barrel-Area behind A.R.L., Barrow, Alaska. Weather - overcast, light snow and S.E wind. Two birds seen flying at 1900. - At 1950, 3 noted flying back and forth between several patches of bare tundra. Two seemed to keep closer to each other, for these 2 would land while the third circled around 1 to several times before landing. The three were noted sitting together several times. Once while flying one bird seemed to chase the other for 20 to 30 ft - indicating some territorial defense or aggressiveness.

6 June Barrow, Alaska
Several noted in the Voth Area - SW of A.R.L.. They were in company with 2 Pectorals + were feeding on a small area of exposed tundra. One was collected.

8 June Barrow, Alaska
30-40 seen so. of Barrow Village. There was no pairing or aggressive behavior noted. The birds were flocked and feeding close together. They appeared

Flock

Erolia alpina

restless and would not allow a close approach.

9 June Barrow, Alaska.
Three seen in drum area feeding on small exposed areas of gravel. No other activities noted. Also ~12 seen near the Voth Area, W. of the Base.

10 June Many of these birds ~~seen~~ along the gas well road. Some seemed to be paired; others not. When the birds are about to land, they fly in a fluttering-type pattern and after they alight, their wings are held high above their body for about one second before folding them into normal position. Also when the birds on the ground are approached, they will often raise one wing to a vertical position (possibly meant as a warning?).

11 June Barrow, Alaska
The flight display and song of these birds were noted several times ~~today~~. They will fly to a height of 75-100 feet and then

Holmes, R.
1959

Erolia alpina

11 June Barrow, Alaska
hover or glide or fly and utter a trilled note which may be short or drawn out. The pitch is lower than that of the Baird's Sdp. but otherwise they sound very similar. This spec. often draws the note out for a longer period of time than does the Bairds. These birds also hold their wings in a vertical position when first landing and then slowly returning them to the folded position. These were also extremely wary and would not allow a close approach. No definite territorial boundaries seem to be set up, yet. However when one indiv. came near a pair, the pair took off and chased the intruder for a considerable distance. After ending the chase, they did not return to exactly the same area, but were nearby (within 150 feet).

wing-up

12 June Barrow, Alaska
Three pair were noted in the drum area. Chasing was noted once. The flight display was heard, but was

Holmes. R
1959

Erolia alpina

12 June Barrow, Alaska

Copulation

not observed. One pair was noted copulating. The female was laying on the snow, and the ♂ was just flying off when they were first observed. After a second or so, the ♀ stood up & flew off after the ♂.

1330 - 1630. Many pair seen in Voth's Area and the Area So. of the village. The birds are mostly all paired now and can be seen chasing over the tundra. The ♂ are often seen in their flight display which may last up to a minute or two or even longer. Upon landing, near a ♀, its wings are held high & are then brought slowly into the body. The ♀ in this case was seen to raise her wings as the male landed and then lowered them slowly into the normal resting position. This seems to be some kind of recognition display. If the ♂ lands where there is not a female, he will carry out the same display. In this case it may be

Display

Holmes, R.
1955

Erolia alpina

12 June **Barrow, Alaska**

called a landing display. The female (and possibly the male) has a recognition or location note, which is a deep guttural "trill". It is given when the two birds are on the ground and separated from each other. Nine birds were collected today to ascertain which bird was doing the displaying. Upon examining the specimens, it seems that the males do the main displaying and that the ♀ is probably the less aggressive member of the pair. Also it seems that if the ♀ is shot, the male will come to her "aid". If the displaying bird (♂) is shot first, the ♀ will vacate the area and not return to the injured bird. Also it seems so far that the males may average 10-15 grams lighter than the females.

♂ ♀ display

degree of aggressiveness

13 June **Barrow, Alaska**

Several pairs and one individual seen along the beach ridge. Aerial display was not seen. It has been noted the past several days that one bird of a pair

Erolia alpina

13 June Barrow, Alaska

(margin, pencil: leg-dragging is display ♂ x ♀.)

invariably dropped its legs as it was flushed. Upon collecting one of these birds today, it was the ♀ which carried out the action. Also it was the bird which gave the alarm note. There is a possibility that there was a mix up when the birds were collected, so this will need further checking.

14 June Barrow, Alaska

Very few of these birds were seen today due probably to the effect of the S.E. wind. However several pairs were seen and 5 birds collected. The territorial establishment was not noted; however it may also have been suppressed by the wind. In examining the 2 females which were collected, it was discovered that both had laid one egg and that a second was about ready to descend into the oviduct. Probably the first egg had been laid late yesterday or early this morning.

(margin, pencil: leg-dragging ♂)

A bird was collected which was giving the alarm note, dropped its feet, and gave an indication of displaying. Upon examination, it proved to be a ♂, thus contradicting the findings of 13 June.

Holmes, R.
1959

Erolia alpina

15 June **Barrow, Alaska**

No birds of this species were seen in the drum area either in the morning or afternoon. However, in the area immed. So. of the drum area, 3 pairs were seen. Flight displays were seen in all three of these pairs and conflict was noted among two.

Territorial conflict

A pair had been sitting on a small patch of exposed tundra and another bird of the 2nd pair flew in their direction. Immediately both birds of the 1st pair took off and chased the intruder for about 100 yards and then both returned to within 30 yards of the orig. location. The bird which was chased circled around and settled near its mate. During the next hour, no conflict was noted; both pairs continued feeding. Along the gas line road, very few pairs were seen or heard during the morning. Only about 6 birds were seen. One female was collected and had not laid eggs yet, although the incubation patches were very evident. Territorial defense was not observed during the morning, evidently the birds were feeding actively and were not moving around very much.

Holmes, R.
1959

Erolia alpina

16 June Barrow, Alaska
The wind seems to have a quieting effect on the birds as they were seen feeding actively with very little display activity going on. During the last several days the landing display has not always been used as the birds come in. Also the flight displays are lessening. On this flight display, it may consist of a series of long drawn out trills which are given in succession as the bird glides & fly shallowly through the air.

18 June Barrow, Alaska
Several individuals seen So. of the drum area and along the beach ridge. These birds were displaying and could be heard up to a considerable distance. The females were presumably on a nest; however none were flushed. These males must defend rather large territories, for one ♂ watched would fly several hundred yards during its displaying activities and settle down and feed for awhile and then fly and stop somewhere else.

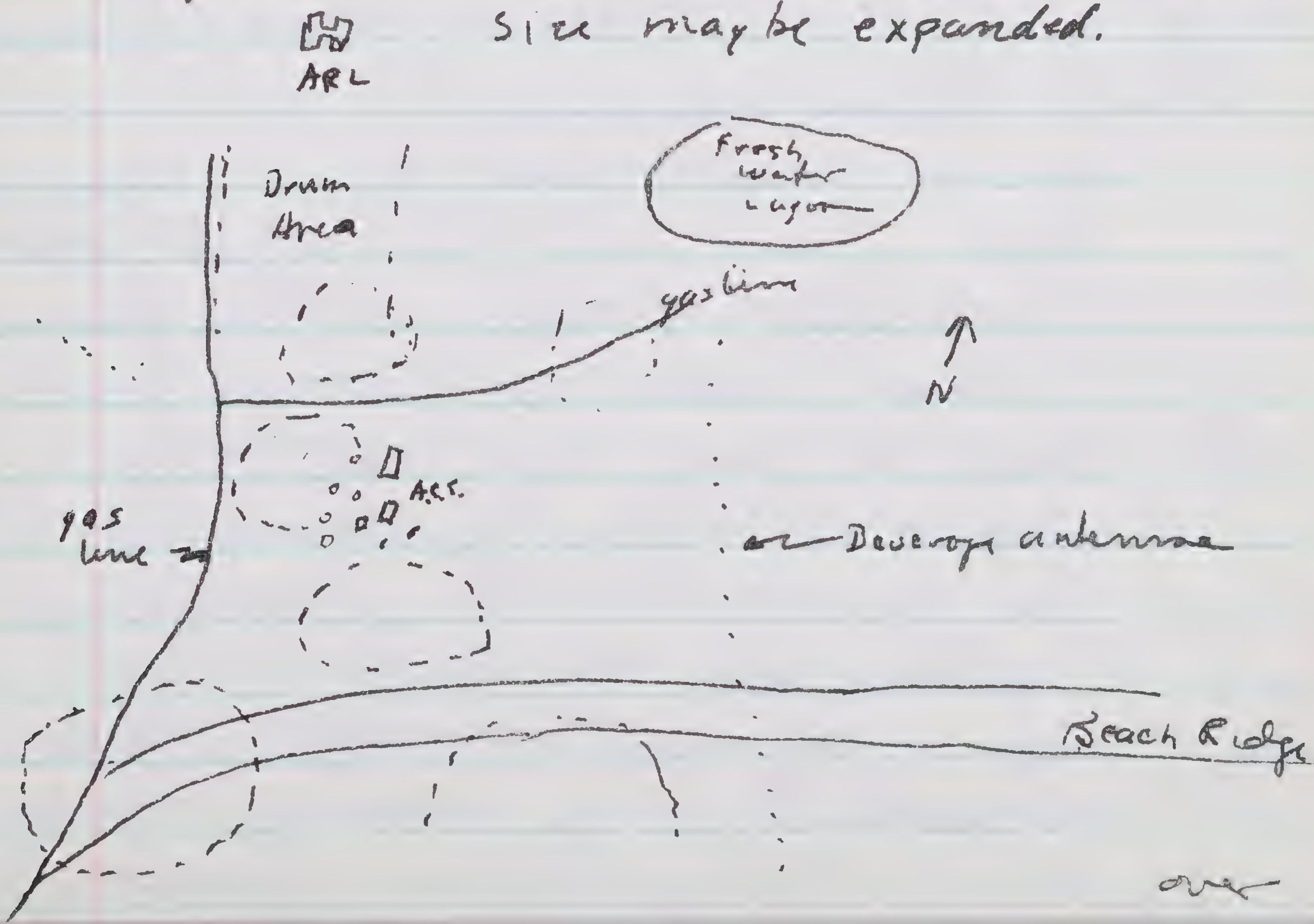
Holmes, R.
1959

Erolia alpina

19 June Barrow, Alaska
Three or four pair seem to be established between the end of the drum area and the beach ridge. Pairs were seen several times. No aggressive action was noted between pairs, but a few aerial displays were heard.

23 June Barrow, Alaska
Several seen between the base and Wohlschlag Slough. Aerial displays were noted several times.

24 June Barrow, Alaska
Several territories were located and are represented in the following diagram. These are very rough and the size may be expanded.



over

26 June. Barrow, Alaska
Several seen displaying today; however they were not heard as commonly as a week ago. One bird was seen with a ^primary feather missing in his left wing.

28 June. Barrow, Alaska
Two displays were heard this afternoon sw of AACS and on gas line ridge. Other individuals were noted but were not displaying.

3 July. Barrow, Alaska
Several seen along the beach ridge; however every thing is quiet due to the strong wind and heavy rain.

6 July. Barrow, Alaska.
Several pairs were seen near A.A.C.S. Nests were not yet located. Molt was apparent in several of these birds. It seems peculiar that the wing molt is coming first before the body molt. The feathers of the belly are still in place and shows no signs of molt. Aerial displays were heard twice during the whole day. Several other

Holmes, R.
1959

Erolia alpina

6 July Barrow, Alaska
flight notes (just parts of the whole display note) were also heard. The pairs seen roughly correspond to those indicated on the map on the preceding page (page 9).

7 July Barrow, Alaska
Several birds seen again in the vicinity of A.A.C.S. Pairs were not noted today, but the aerial display was heard three times. Molt in the wing was noted in all birds seen. A chase was noted along the beachridge between the two trap lines. It was accompanied with the aerial display. The pair was seen at 1500 by Pitelka in the same area.

8 July Barrow, Alaska
A chase was seen in the U.A.S. Area where one bird had moved into another territory (caused by the presence of a Snowy Owl) and was immediately chased out. On the aggressor's return, he gave the full flight display. The raised wing display on landing

Holmes, R. Erolia alpina

8 July Barrow, Alaska
Was noted several times.
10 July Barrow Alaska
One bird was collected near Voth's Area. It was a male and had incubation patches. The wings were molting, but no body molt had begun. Also this bird did a full display before he was collected. Others were seen near AAES in the afternoon and they too were molting in the wings and were still displaying.
12 July Barrow, Alaska
A pair was observed near Trapline IV, W. of Voth's Area. The male(?) was displaying fully over a period of about 10 minutes
13 July Barrow, Alaska
A pair was observed about 100 yards west of AACS. The male was seen displaying on several occasions, twice in front of the female. The female was seen using the mouse-running technique several times. Another bird was displaying just So. of A.A.C.S. One was also heard in the drum during the late evening

Holmes, R.
1959

Erolia alpina

14 July Barrow, Alaska
Several birds (incl. 4 pairs) were noted south of Footprint Lake. Displays were heard, and chasing was observed.

15 July Barrow, Alaska
The aerial display was heard about three times at the South end of Footprint Lake. Two birds were seen which appeared to be paired, but no activity was noted.

16 July Barrow, Alaska
Two aerial displays were heard along the South end of the Beach ridge near the causeplat. Otherwise, no others were seen.

17 July Barrow, Alaska
No activity near A.H.C.S. None were seen or heard.

18 July Barrow, Alaska.
Several aerial displays were heard near Footprint lake this afternoon and evening. Most of them, however, were not the complete song, but consisted of the last part (the drawn-out trill). One male was collected which had incubation patches. No adults with young were found

19 July Barrow, Alaska
One complete and several incomplete

Holmes, R.
1959

Erolia alpina

19 July Barrow, Alaska
displays were seen and heard near the south end of footprint lake.

20 July Barrow, Alaska
One displaying bird was present near Jaeger nest #3 (see map of Barrow region) on the west side of Footprint lake. It displayed several times and chased another individual away.

22 July Barrow, Alaska
Two were seen on the west side of footprint lake near jaeger nest #3. They were collected and were ♀ and ♂. Both had incubation patches. The male had displayed.
♂ display

23 July Barrow, Alaska
6 seen together in a closely-knit flock just west of Footprint lake. They were feeding and when flushed flew off in a group. One of the males was heard in a half-aerial display. This was much weaker than usual and was evidently coming to the end of the displaying period
[illegible] to Ads?

24 July Barrow, Alaska.
Several pairs were encountered So. of Voth's Area and east of Voth's Slough. These acted like they still had eggs, or the young were just

Holmes, R.
1959

Erolia alpina

24 July Barrow, Alaska
[pencil margin note: whinny] hatching. A partial display was heard 3 times.

27 July Barrow, Alaska
A flock of 15 ± was encountered just no. of Footprint Lake. They were all feeding and three were collected. These were both ♂♂ and ♀♀.

29 July Barrow, Alaska
[pencil margin note: flock] A group of 6 was encountered in the southern part of Footprint Lake. They were mixed in with the Pectorals and Red Phalaropes.

31 July Barrow, Alaska
Three single birds were seen between ARL and Wohlschlag's Slough. Otherwise no activity was noted.

1 August Barrow, Alaska
[pencil margin notes: flock; body molt] A group of 6 was encountered in Footprint Lake, and 3 more were just No of the Lake. These birds still are not very fat, and the body molt is now taking place.

4 August Barrow, Alaska
Several groups seen. One of 4 No. of Footprint Lake among the marsh areas. A group of 8 on

Holmes, R
1959

Erolia alpina

4 August Barrow, Alaska
company with Pectorals & Golden Plover on the Southern half of Footprint lake, and a group of 6 on the No. half of the lake. This latter group was a family group with 2 Ads and 4 Juv. Both parents became alarmed when two of the chicks (which were able to fly) were collected. One adult which oried up several times was collected and proved to be a male. No displays (aerial or raised-wing) were noted.

5 August Barrow, Alaska
Two seen in the south end of the drum area. A flock of 18 were present along the sandspit towards Nuwuk. They were feeding in the small shallow ponds on the lagoon side of the spit. All were molting. The wing molt was nearing completion on all 4 collected. The fat condition was very light.

6 August Barrow, Alaska
About 30 birds were present among the large number of Pectorals and Semipals on Footprint Lake. These were feeding in

Holmes, R.
1959

Erolia alpina

6 August Barrow, Alaska
groups of 6-8 on the exposed mud flats. Several young birds were seen and two were collected. Most seen were in groups of 2-3 juveniles, but no adults were present.

7 August Barrow, Alaska
Fewer were seen today than were noted last night. Probably 15-20 were seen, and two juveniles were collected. They were not accompanied by adults. The adults now are molting their body feathers and the back markings are a mixture of red and gray feathers. The wing molt is nearly complete. Over to the east, in the area between Wohl. Slough & Ikpik Slough, probably 200 of these birds were present - all were adults. No young could be found. These were all molting - some were further along than others.

9 August Barrow, Alaska
Several adults were noted on Footprint Lake, but no young were seen.

Holmes, R.
1959

Erolia alpina

11 August **Pitt Point, Alaska**

About 8 birds seen in vicinity of small ponds, west of the base. Included among these were three young birds which still had down about the head.

15 August **Pitt Point, Alaska**

None have been seen since 11 August.

16 August **Pitt Point, Alaska**

Three molting Ads were seen just 200 yards from the base. One of these had its dark breast feathers almost completely replaced. The others were still in a state where the breast (belly) appeared "speckled" with black and gray.

18 August **Barrow, Alaska**

Four immatures and 1 adult were noted feeding together near A.A.C.S.

19 August **Barrow, Alaska**

This was the most common bird seen today. Approx. 300 were present on the southern half of Footprint Lake. The ratio of young to adults seemed to be nearly 50:50. All were feeding in the shallow ponds and mud area with no family groups being distinguishable.

Holmes, R.
1959

Erolia alpina

19 August Barrow, Alaska
Several birds were collected. Numerous individuals (both Ad. + Juv.) were noted along the road to the lake and on the northern half of the lake.

21 August Barrow, Alaska
The southern half of Footprint Lake was again most heavily populated with birds of this species. They were feeding in one large group, composed of about 300 birds again. This is the only place where such numbers have been observed. Out on the tundra, among the ponds, etc., due probably to the amount of available mud (- constituting a change in diet?). The loud "scree" is quite diagnostic and aids in identification during the thick fog which has been present for several days.

23 August Barrow, Alaska
Only 46 birds were present on Footprint Lake this afternoon. Several were nearly in their complete winter plumage - with gray bellies and gray backs (sometimes with a few red

Holmes, R.
1959

Erolia alpina

23 August Barrow, Alaska
feathers). The wing molt seems to be nearly complete in all individuals, however the state of body molt is quite variable. Several birds were noted with solid black patches, others with parkie ones and still others with none.

24 August Barrow, Alaska
One heard on the east side of the Beach Ridge.

25 August Barrow, Alaska
6 immatures seen in Central Marsh.

26 August Barrow, Alaska
(in margin: peak of flock)
Large groups of 30-40 birds were present in Footprint Lake. About 400 birds were present on the lake bottom. These were immatures and adults mixed, and all birds were molting their body feathers (all stages were again seen). About 1 dozen immatures were present on Central Marsh during the evening.

Holmes, R.
1959

Erolia alpina

27 August Barrow, Alaska
One flock of 15 seen east of the Beach Ridge. The was composed of immature and adult birds which were feeding among the shallow pools. Several flocks of 10-15 were noted just north of the duck camp among the ponds and along the shore of the lagoon. Probably 150 birds were noted. None were seen near Nuwuk.

28 August Barrow, Alaska
Only scattered individuals were seen and heard during the entire afternoon which was spent along the Cornwell Road and in footprint lake. No flocks were noted on the lake itself. Mostly immature were seen.

29 August Barrow, Alaska
One seen near Voth's Slough.

31 August Barrow, Alaska
A flock of 8 was present on a small pond just SE of Voth's Area. Very few were seen on the mud flats of Footprint lake. An estimated 20-24 were present here among the

Holmes, R.
1959

Erolia alpina

31 August Barrow, Alaska
abundant dowitchers. No others were seen. Those that were seen were primarily immatures; however, three adults were noted - these were all in a state of molting their body feathers.

2 Sept. Barrow, Alaska
Three seen north and west of Voth's Area and 2 were noted along the lagoon. 1 on the beach ridge.

3 Sept. Barrow, Alaska
One group of four were seen in Voth's Area and two other individuals were along the "creek" that flows from Voth's slough. All birds were (body-molting) immatures.

all imm

5 Sept. Barrow, Alaska
None seen.

Holmes, R.
1960

1.

Erolia alpina

25 May Barrow, Alaska
1 seen by Maher near Voth's Area.

29 May Barrow, Alaska
One seen + collected (♂ - 14 x 8 mm testes) just west of Footprint Lake on a bare ridge. Two more were seen by Dave Mullen just NE of the airstrip.

31 May Barrow, Alaska
Two were seen together this morning near the shore of Elson Lagoon, just south of Wohlschlag Slough. Both were feeding when they were first noticed; they quickly, however, flew towards the north. In the evening, one was heard, from the lab, displaying near the drum area. Also near Elson Lagoon again South of Wohl Slough, one was heard + seen displaying, while at least 1 other pair were seen. The bird was heard to do the aerial display 3 times before returning to the ground to feed. All this time, two birds (a pair?) were feeding right beneath him and paying no attention to the displaying bird. Once, one of the birds on the ground lifted her head + gave the trill, which is

1st disp.

pr + display

ground trilling

Erolia alpina

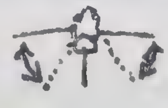
31 May **Barrow, Alaska**

usually associated with the aerial display. This did not occur when the lone individual was displaying. The major activity of all three birds was feeding. Several times the birds came into contact with lemmings, but they usually stepped aside & let the lemming go his own way.

1 June **Barrow, Alaska**

One heard displaying west of the south end of Footprint Lake. No others were noted in that area or farther south along the west side of Ikroavik. One was seen displaying this evening on the west shore of Elson lagoon, south of Wohl. A bird(♂), possibly this one, was collected in the same area one-half hour later. The display consisted of a flight to 40 to 50 feet and hovering in this position for 50 sec. During this time there were several drops in altitude sev. feet, but regains them. The call was the typical

with a more musical

trill as it descended. The wings were beat regularly in spurts. There would be 8-10 beats from the horizontal down to approximately the 135° ∠.  . In

terr. aerial Display

Holmes, R.
1960

Erolia alpine

1 June **Barrow, Alaska**
The intervals of $\frac{1}{4}$-$\frac{1}{2}$ sec, the wings were vibrated very rapidly in the horizontal position. This is usually the time when the bird lost altitude.

2 June **Barrow, Alaska**
One bird heard displaying behind the lab, & one heard on the west shore of footprint. None seen or heard near Ikroavik. One heard in the evening near the south end of village slough.

3 June **Barrow, Alaska**
One seen along the beach ridge, feeding in one of the small thawed ponds. One seen near Elson & was collected. Then a pair? seen feeding on a polygon top. These two took flight upon my approach & flew 30 yards towards the south. The ♀? landed and the male did a low (10-15 ft) aerial display. Just as he finished, another bird flew in & chased the pair out & followed closely behind them for about 200 yards before turning back. Apparently territorial boundaries have been established. Further south along the lagoon, a bird was seen feeding in the polygon troughs. After a few minutes she was joined by a displaying male. Both birds fed for awhile & then both chased a third bird

Holmes, R.
1960

Erolia alpina

3 June <u>Barrow, Alaska</u>

which had landed near them. The chase lasted for about 40 yards, at which time the pair landed & began feeding again, while the intruder flew off. During the next several minutes they fed quietly with occasional interruption by the ♂ (?) when he gave the aerial trill. This was done several times while he was on the ground & was usually given when he was crossing a mound or a patch of snow from 1 feeding locality to another. One bird, believed to be the ♀, was collected; the other flew off & was not heard or seen during the next 10 minutes.

ground trill

In the late afternoon in the same area, two birds (pr.?) were seen feeding. A third bird which had just finished displaying (the pr had paid no attention to this display) flew in & landed about 8 feet away. It then walked rapidly toward the birds & when about 3 feet away, all three took flight. The chase lasted about 2 minutes, and all the time they were wheeling back & forth over the tundra & over Elson lagoon. When the ♂ quit, the pr. flew southward. Their manner of flight was the same as in chase, both birds flew

pr. [illegible]

Holmes, R.
1960

Erolia alpina

3 June Barrow, Alaska
swiftly, one behind the other, while one uttered the shrill trill-like note. This activity appeared to be the eviction of a pair from an already established territory. This chasing on the wing was noted earlier in the day between an established pair and may be a pairing or "mating" display. Another chase involving three birds was just noticed. Again two birds were driven off by the possessor of the territory. It seems possible that these birds are already paired before they try to claim areas.

4 June Barrow, Alaska
One bird heard displaying on the ridge (beach) near the magnetic station

5 June Barrow, Alaska
Paired birds were seen all along the road between Barrow and the Inaru. No groups were noted. These birds seemed relatively common along the Inaru as numerous displaying ♂♂ were seen.

6 June Barrow, Alaska
Pairs of birds were seen just south of Footprint Lake and along the Northern shore of Isatkoavik. None, however, were seen on the west shore of Isatkoavik.

Holmes, R.
1960

Erolia alpina

6 June Barrow, Alaska
where considerable ridge top was exposed. East of the gas well, several pairs were again noted, and 2 were collected. The ♀ of one had an ovum of 9 mm; the other bird had an ovum size of 5 mm.

7 June Barrow, Alaska
Several pairs seen during the morning near Wohl. Slough. Bird activity was rather quiet, however, due to the strong NE wind. In the evening, a group of three birds was seen; 1 ♂ was collected. These three were feeding together with no aggressive action. The two other birds were believed to be ♀♀. Another pair was seen feeding just South of Wohl. Slough, and within 30 feet of them, a second pair was busily feeding. If either of these birds had been settled, there would surely have been a territorial encounter. Later they fed closer to each other with no effect.

6 June Barrow, Alaska
Numerous pairs were noted on the ridge N. + E. of Ikroavik. Several were seen along the west side. One ♀ was collected which had extremely large

Holmes, R.
1960

Erolia alpina

8 June Barrow, Alaska
ate, which indicates that egglaying is near.

9 June - Several pair seen along Elson Lagoon. Once a pair of birds flew in + landed in another pairs territory. A chase ensued involving all 4 birds. The chase apparently left the territory + entered a 2nd one. The third pair then took chase + the 6 birds swirled back + forth over the tundra for several minutes. Finally the prs. seemed to get back to their own areas. When an established ♂ sees a foreign red-back flying towards it, he flies up and straight toward the intruder. As he does so, he holds his wings at a 45° ∠ above the horizontal + utters the shrill trill. If the incoming bird doesn't turn, a chase then occurs.

Terr. defense behavior

10 June Barrow - several pair seen along the Ridge west of Ft. Pruitt Lake + near Ikroavik. Sev. indiv. were collected. In the evening near Elson Lagoon (so. of Wahl.), three birds were watched for about 45 min. Two of the birds remained together constantly, + all three would meet in the course of their feeding every few

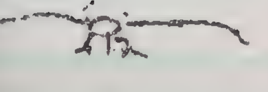
Holmes, R.
1960

Erolia alpina

10 June **Barrow, Alaska**

minutes. The two together appeared to be ♂ and ♀ (A + B respectively). The third bird (C) which fed by itself appeared to be a ♂? Usually A would follow closely (4-6 inches) behind B as they moved along. Each would peck at the tundra several times, then they would ~~fly~~ run several feet (1-3) where they would peck again. This went on constantly. Occasionally A would catch up to B + attempt to mount her. B would usually turn + chase A for a few ft trying apparently to drive A off. B would revert her attention to feeding + A would feed on behind her. Copulation was completed only twice in 14 attempts. Three times when they encountered C, a different behavior was noticed (the remainder of the times of encounter (2 times) - no unusual activity resulted). The first time, the birds fed up to each other and as they did so, C raised his wing (the one towards them) + uttered a guttural note. A then raised both his wings in response + gave the usual trill. He then lowered his wings + placed them horizontally with the tips slightly downward,

copulation



Holmes, R.
1960

Erolia alpina

10 June Barrow, Alaska

The tail was not spread nor raised & seemed to be in normal position. The head was thrust forward so that it was approx. in the same plane as the body. The aerial trill was given while the bird was in this posture (which was held for about 10 seconds, while the bird walked behind the ♀ with a slight sway). The ♀ paid no attention and continued to feed. The other ♂ (C) turned and walked the other direction after the ♂(A) finished this display. C had been standing about 1 foot away the entire time. The second & third times they encountered each other, the 2 ♂ recognized each other by the wing raising, but A was seen to give only a minor version of the display. Both times, he lowered his wing to a horizontal position & gave part of the trill without moving from his position & then he walked normally after the female. It seemed that A was doing this courtship behavior for B & was not concerned about C. However, later C was close by, A was more

[illegible]

Holmes, R.
1960

Erolia alpina

10 June Barrow, Alaska
attentive towards B + was "trying" harder. Occasionally when A + B were feeding + walking, B would turn around + run after A for no apparent reason. After these short chases, the pattern would change + A would again follow behind B.

11 June - Two ♂♂ seen along the beach ridge. One was near the magnetic station where it displayed + then landed on the ridge. It later flew off towards Central Marsh. The second was seen displaying in the white-ring sector of the ridge.

12 June - Several pair were seen along the west shore of Ikroavik and in VOR's Area.

13 June - Two pair seen along the beach ridge between the magnetic station + the gas line. No territorial encounters were seen; there was very little activity. In the afternoon in Britton's Area, Activities were more active. One ♀ was mounted by a ♂ who stood on her back for about 25 sec. Copulation did not take place. At the end of this time interval, the ♀ reared up and walked off feeding. The ♂ followed behind her for awhile

Holmes, R
1960

Erolia alpina

13 June Barrow, Alaska
with one wing raised. The bill was open, & apparently a note was given, but the wind was against me for hearing. Later, a pair was seen in the chasing display, but no definitive displays were seen.

(warm-up in courtship)

14 June - several pairs seen chasing near the ridge plot, Ikroavik

15 June - a pair seen going through the chase routine where the ♂ attempted to mount the female, but was thrown off several times. This lasted for about 1 min before the ♂ flew up to display. This took place along gas-line ridge.

17 June - a nest was located just east of the drum area about halfway between the camp & the large piles of drums. It was found in the morning by Warner and contained 3 or 4 eggs. In the evening it was destroyed by an ARL man driving a weasel over it! It was located in a sparsely vegetated area. There were a few pieces of standing grass, but most had been cut by the lemmings. It was on the top of a moderately developed polygon.

(1st nest)

Holmes, R.
1960

Erolia alpina

21 June Ikrravik (Barrow), Alaska
wing-up There appears to be several pairs of birds on the plot area. The wing raising upon landing is quite universal among all of the redbacks. The wing-up towards the observer is also quite common when the bird is startled on the ground.

23 June - A nest was located 50 yards NW of the wanigan. It is located on the top of a low polygon and is surrounded only by low grass, thereby making it greatly exposed.
nest The four eggs are light tan in color with darker, rather large, blotches of brown. It does not seem to have the many smaller spots as does the egg of the Pectoral. Pairs were seen on the plot today, & these are plotted on the census record.

24 June - A second nest was located today. This one
nest was on the plot, just N.W. of stake 9.2. It was located on the top of a low polygon among a clumps of standing grass. The rest of the vegetation in the area had been clipped and was laying flat. The bird could be seen

Holmes, R.
1960

Erolia alpina

24 June <u>Ikroavik, Alaska</u>

on the nest about 30 feet away. The cup was lined by the grass which was matted down when the eggs were laid. The 4 eggs in the nest were light tan in color with dark brownish or purplish spots. These spots were more concentrated toward the larger end of the eggs.

The incubating bird is usually very quick to leave the nest when "danger" approaches. Even the birds here near the wanigan will "pop" off the nest as soon as I come into sight. This makes it very hard for nest finding. If the birds are startled on the nest, however, they give a very strong distraction display. The bird assumes the mouse run posture where the scapulars are raised, the tail is lowered and spread, the head & neck is extended forward, and the wings are spread outwards. They then go flapping over the tundra making a whinering note. This distraction display of the red-back seems to be one of the most pronounced of any of the other sandpipers to my knowledge

distraction display

Holmes, R.
1960

Erolia alpina

25 June Ikroavik, Alaska
Another nest was found today near the wanigan. It is located 80 yards west of the 1st nest along the arm of the ridge which extends in that direction. It also is located on the top of a low, grass covered polygon (by this I mean, polygons which have only shallow troughs and appear to be only small mounds).

26 June Barrow, Alaska
Two pairs were in the vicinity of AACS; their nests were not located. In the evening, 4 birds were collected in the area between Britton's & Voth's Areas. All of these (3♂, 1♀) were well along in the wing molt. Pitelka reports seeing wing molt as early as the 21st. In general, the redbacks were hard to find, and displaying birds were heard only occasionally.

27 June - Several displaying birds were present along gas line ridge & in the area of old nest #2 (see map). Wing molt seems to be going on in nearly all of the birds. Nesting is the main activity now; territorial displays are seen occasionally.

Holmes, R.
1960

Erolia alpina

28 June **Wainright, Alaska**
Red-backs were quite common near the dewline site. During our 3-4 hour walk around this area, these birds seemed to be present almost every where. Several birds performed the moreve run which indicates that nesting is still under way. Displaying birds were fairly common, but few chases were seen. Most of the birds were molting.

30 June **Ikroavik, Alaska**
Red-back activity was low this morning when I ran the census in the North 40. A pair at the north end appeared to have a nest nearby. This will have to be found soon. The pair nesting north of the gravel inlet (nest 8.2) was not present today. When the nest was checked, it was found destroyed. A lemming burrow was nearby, and 2 of the eggs had rolled into this hole (in the mossy covering). There were no remains of the other two eggs, so it seems probable that a predator (jaeger - weasel, ?) may have take the 2 missing eggs while the other two were rolled into the lemming burrow. The actual location of the cup could not be determined.

nest destroyed predator

Holmes, R.
1960

Erolia alpina

30 June Ikroavik, Alaska

so it is possible that the lemming could have undermined the nest & the eggs fallen through. However, the other 2 eggs can not be accounted for with this line of reasoning. As mentioned before the birds were not present this morning. The nest near the wanigan is still active, and at least one of the incubating birds is wing molting.

2 July - The following activity was seen near stake 1,0 this morning. A Red-back was feeding on the ground. Suddenly he raised both wings to a vertical position and began to give the aerial trill, (also a couple of "kraw-kraws" were given) and as a bird landed near him he began to fly & chase this newcomer. The chase finally went out of sight. This aerial display vocalization can apparently be given completely on the ground and is a method of announcement. To describe this more fully - The bird flies to a height of 40-50 feet (this is usually not a steep, high powered flight as seen in fuscicollis), where it hovers giving a series of calls

aerial display on ground

aerial display

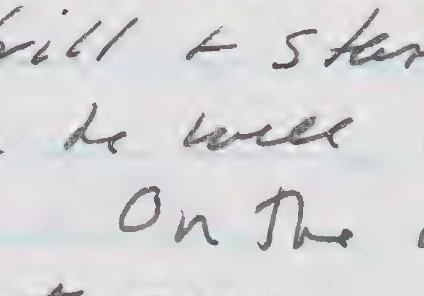
Holmes, R.
1960

<u>Erolia alpina</u>

2 July <u>Ikroavik</u>, <u>Alaska</u>

notes which can best be described as kraa, kraa, kraa ...... Sometimes a kraw seems better as a description. This is rather a coarse or harsh sounding call. This call may be interrupted by pauses / several seconds where no call is given (as the bird remains in the air) or it may be broken by a long, drawn out aerial trill. This trill is usually given when the bird descends to the ground, but at times the bird may descend awhile and then end his trill & start to climb upwards where he will again give the kraa note. On the downward trill, the note is not given in a steady sequence. There is often an unequal pulse to the sequence of notes, but in general there is a lowering of the pitch & the trill gradually tapers off - as shown below

kraa, kraa, kraa, ...,



This is in contrast to <u>bairdi</u> which has a similar note to the kraa, but it is higher pitched & not

Holmes, R.
1960

Erolia alpina

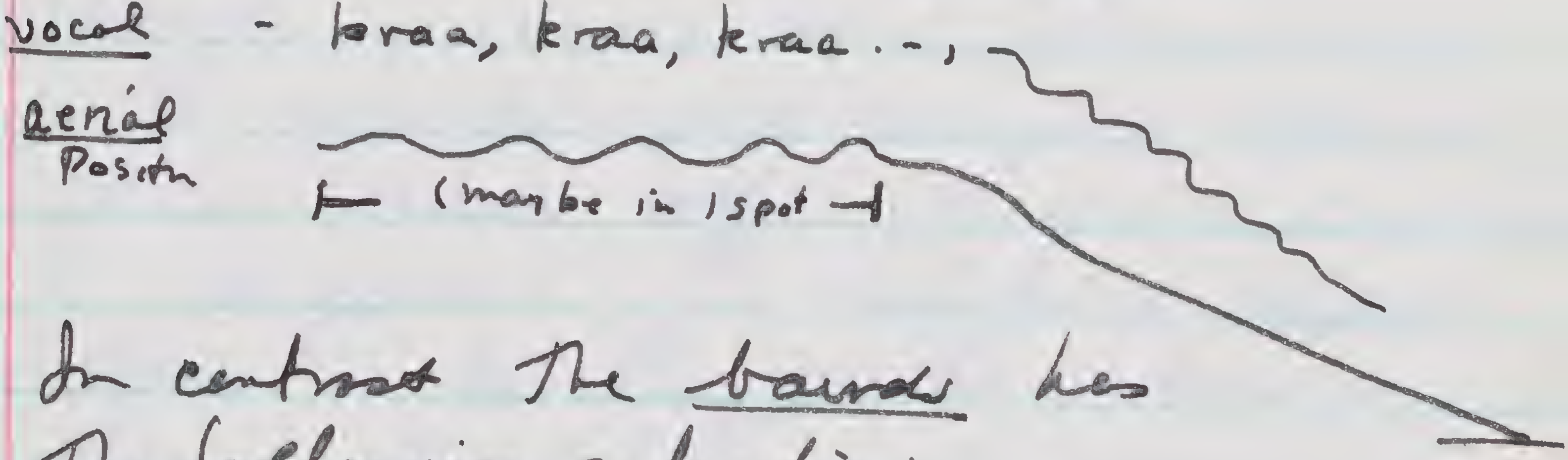
2 July Ikroavik, Alaska

as nasal (more of a pree, pree, ...). The trill is often given (by *bairdi*) in short sequences where the notes are all at the same pitch. This is shown below for *bairdi*:

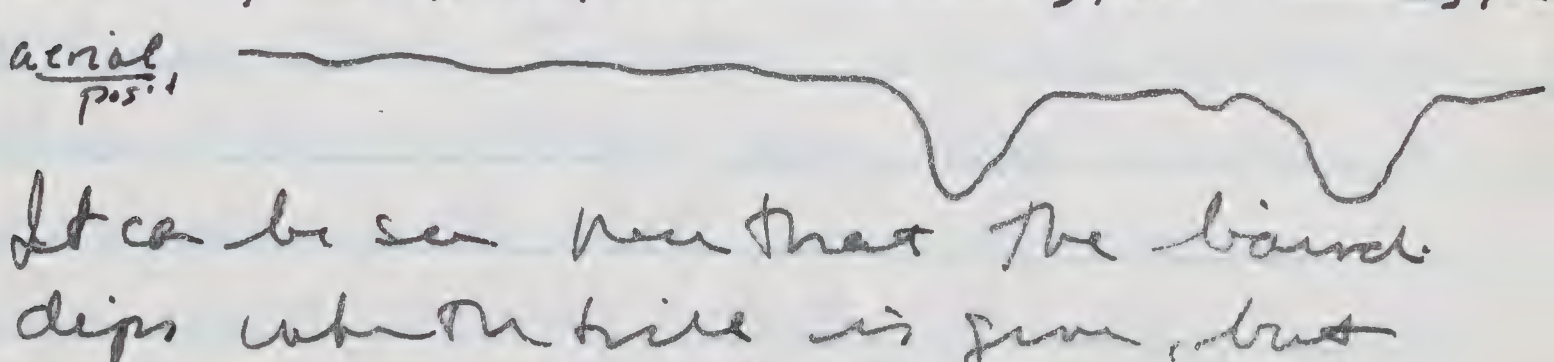
pree, pree, pree ..., ——, pree, pree, ..., ——

When *alpina* makes its downward glide + gives its long drawn-out trill, it may or may not set its wings in a V-pattern, and it usually glides a considerable distance. -

Say



In contrast the *bairdi* has the following situation:



It can be seen here that the *bairdi* dips when the trill is given, but usually returns to its former altitude. When it glides to the ground it usually keeps its wings at a 45° ∠. In *fuscicollis*, the pattern

Holmes, R.
1960

Erolia alpina

2 July Ikroavik, Alaska

varies even more. The "poing-ree" is given in the air with no noticeable correlation with dipping or declining to the ground. It hovers in one spot giving its call & then floats down to the ground on outstretched wings during which time there is usually no call given. This downglide usually occurs in a spiral fashion, and the bird lands with his wing held at ~70°∠. When fuscicollis rises to display, it flies sharply upward at a steep angle with powerful - back-sweeping strokes. It then levels off & begins to display.

In general, the habitat of alpina seems to be the gentle ridges & slopes. Most of the nests which I have found been in areas of low polygons and therefore shallow troughs. These have always been high center polygons & the nests were placed on this well-drained locale. Feeding seems to take place both on the polygon tops & in the lower marsh areas. The birds have ~~not~~ been noted to feed primarily at

Erolia alpina

2 July Ikroavik, Alaska
pond edges, and they seem to favor a wet marshy swale or the polygon tops. Wing molting seems to be a universal activity now, as every bird seen today was in this process. Body moult has not been noted.

4 July - Very little activity noted on the census plot

5 July Barrow, Alaska
The beach ridge was checked from the gas line to Wolfschlog Slough. One bird was collected east of AACS, & one other was seen at the south end of the ridge. No displays were heard.

6 July - Voth's Area & Slough were visited & the ridge between Voth's Area & Footprint lake was checked. Only three birds were seen; 1 was collected. The amount of activity has definitely slowed down as very few displays are now heard & birds are hard to find. The wing molt seems to be occurring rapidly, for many of the birds now have their "gaps" filled in or at least partially so. Body molt was not evident on the two specimens collected.

Holmes, R.
1960

Erolia alpina

8 July — Ikroavik, Alaska

Maher located a nest on the top (near bev. antennae) of the beach ridge yesterday. It contained 4 eggs. Only 1 or 2 birds were seen between the camp & the wanigan. At the wanigan, an occasional ♂ could be heard in aerial display, including the bird with the nest near the sled. This nest when checked had 2 small young & 2 eggs, which were pipping. Both adults were in attendance & both were excited. No distraction display was seen, however. A low fence was placed around the nest to retain the young for banding. The other nest farther west had already hatched, for there were no signs of the adults ~~or~~ young. By midnight, the nest near the wanigan had completely hatched & all 4 young were in the nest cup. Another brood was seen just west of stake 2.4.

9 June — Three of the young were in the enclosure this morning; these were banded and released. Both adults were present and gave the rah, rah, rah..., call. The birds in the pen were extremely

Holmes, R.
1960

Erolia alpina

9 July Ikroavik, Alaska
hard to find, even though the diameter was only about 3 feet. Their coloration blended in extremely well. The adults gave warning to the young, who immediately froze & didn't move. This also occurred in the brood seen last night. Several displaying birds seen & heard today.

10 July - The broods and adults near the wanigan were not seen today. Yesterday evening, they seemed to be moving west along the arm of the ridge. A common call note which is given once the birds have overcome their surprise at being interfered with is a rhaaa, rhaaa, rhaaa.... This has a trill like quality, and is given when the bird is alert & aware of an intruders presence. It was also noticed yesterday morning that 8 hours after the last chick hatched, there were no signs of the broken shells within the 3' diameter of the nest. Several birds heard displaying today, but these displays are getting weaker & weaker and are not given as frequently.

Holmes, R.
1960

Erolia alpina

11 July Barrow, Alaska
The nest on the ridge is still there; only 1 bird was seen nearby. The nest is located on the top of the ridge in a fairly grassy area. The cup is a depression among the grasses & is fairly well covered by the overhanging grass.

12 July - A Dr with 4 young (1-2 days old) was seen just South of Central Marsh. by Maher & Reynolds. Several displays were heard in the ~~morning &~~ evening near Voth's Area.

13 July During a trip to Ookpik slough only 1 bird was seen. I was surprised to find so few in this area which appears to be good redback habitat. No displaying birds were heard either.

14 July Barrow → ~~Shivaik~~, Alaska
Two birds were seen flying together, just No. of ~~Footprint~~ Lake. When chased, they remained closely associated & when both were collected, they were ♀♀ with fine brood patches. These were the only two seen on the trip from Barrow to the lake & return. 1 bird was seen at the north end of the plot (1 the No. 60).

2♀ (

Holmes, R.
1960

Erolia alpina

15 July Barrow, Alaska
No birds heard displaying today except 1 vocal display heard near Voth's Area. Only 1 or 2 birds were seen in the vicinity of traplines IV A+B during the afternoon + evening.

16 July Barrow - Alaska
The birds at the nest on the ridge near the beverage antenna were present + the eggs are not hatching.

17 July Ikroavik, Alaska
Several seen between Barrow + the lake. One family group was present at the lake (south of the 100 acre plot).

18 July Barrow, Alaska
2 chicks were caught in the trapline in the fertilizer plots. 2 displays were heard.

19 July - Several were encountered west of Voth's Area. One family of 2 Ads + at least 3 young were seen out in the marshy flats west of Voth's Marsh. Other adults were out close to Denali ridge. It seems that once the young are born, the adults & also

Holmes, R.
1960

Erolia alpina

19 July Barrow, Alaska
them down into a wetter and usually more marshy habitat. This seems to be true of many of the sandpipers. There may be better food or at least more quality — the marsh invertebrates — this would have to be checked via stomach contents. Several displays were heard in the Dunali ridge area.

21 July Skivoarch, Alaska
No broods were seen today, but several adults were encountered (1 collected). One display was heard off 1 the territory (plot).

22 July Barrow, Alaska
The nest on the Beach Ridge had hatched since the last time the nest was checked. The adults + young were not present. No displays or other birds were seen today.

23 July Barrow, Alaska
No birds were heard today during the jaeger watch nor between the camp + the Beach Ridge. There were also none at Meade River.

Holmes, R.
1960

Erolia alpina

25 July Barrow, Alaska
Very few were seen in a trip through Voth's Area, Voth's Slough + the surrounding country. No juveniles were noted, but 2 different Adults were noted doing a mouse-run. No displays were heard.

26 July Barrow → Ikroavik, Alaska
along the east shore of Ikroavik, at least three family groups were encountered. One group had flying chicks, another had chicks which had not been hatched more than a day or two. Another had half-grown chicks. Several other broods were also seen during the afternoon. The brood which had just hatched was attended by both adults. The ♂ displayed several times and gave a loud trill which brought the young to him. He then seemed to "nuzzle" each chick to see if it was allright (?). During this time, the ♀ was standing nearby giving a rocking trill. The chicks when scared would swim on the edge of the lake to avoid being caught.

flying

♂, ♀ both near young

Holmes, R.
1960

Erolia alpina

28 July **Barrow, Alaska**

Only 2 groups were encountered during my travels in Voth's Area + vicinity. One group consisted of 3 young + 2 Adults, all of which were feeding in a marshy-muddy area N of Voth's Area. The young were flying. The adult had nearly completed their wing molt, but the body molt was only underway on the back. There was no ventral molt or neck molt (see. 788+789). The second brood consisted of 3 flying juveniles and 2 Adults (790-793).

29 July **Barrow, Alaska**

Only 1 family group was encountered east of the Beach Ridge. It consisted of 1 Ad. and 4 flying young (see 795-797). One other adult was seen.

30 July **Barrow, Alaska**

Only 2 individuals were seen in Voth's Area. One was an adult ♀; the other a flying juvenile. These were not seen together, and I do not believe that they are part of the same family. This area near Voth's Area is beginning to show signs of dissolution. It is now quite difficult to find

Holmes, R
1960

Erolia alpina

30 July Barrow, Alaska
redbacks there (or for that matter - any other shorebirds, too). The areas where they have been found previously, have been the wet areas where there is sufficient exposed mud. On the ridges or sloping areas where there is good drainage, there are no sandpipers.

2 August None were seen this afternoon in Voth's Area + Footprint Lake. The scarcity here almost certainly reflects the amount of collecting I have done in this area, however.

3 August Barrow ⇌ So. Barrow 3, Alaska
During this trip today, only 8 RB's were seen (1 Ad with 2 young, 2 groups of 2 young + 1 Adult). The adults seem to have completed their wing molt, but as of yet, their body molt has not started. All of the young seen were old enough to fly. All birds were seen in rather wet marshy areas and were widely scattered. None have been seen among the flocks of birds in the dry lakes. Thus lack of birds may

Holmes, R.
1960

Erolia alpina

3 August Barrow – So. Barrow 3, Alaska
indicate poor breeding success, or merely that they are scattered during this portion of the summer. Even so, it takes a considerable amount of driving in the area to find any at all.

6 August Barrow – Ikroavik, Alaska
One individual seen on the flat at Ikroavik. This was the only Red-back seen on the tundra today. On the south half of Footprint Lake, there were about 75 to 100 Red-backs. Most of these birds were adults. All were molting – both dorsally & ventrally. A tail molt was noted in one or two of those collected. The wing molt seems to be nearly complete. These were the most numerous birds on the lake today.

8 August Barrow, Alaska
Two flying juveniles seen north of gas line ridge in the morning. They seem to be very scarce on the tundra now.

Holmes, R.
1960

Erolia alpina

11 August Barrow, Alaska
No birds were see in Footprint Lake today nor in the area north of VOTH; Area & vicinity.

15 Aug - None have been seen during the last few days in the goslive - or central marsh areas. Five juvenile were seen east of the Beach Ridge near the traplines on 13 Aug. Today a group of 3 juveniles & no adults were seen in the north end of Footprint, but there were none in the south half. Maher reported a nearly completely molted individual in the Central marsh area.

16 Aug Barrow = Cape Lisbourne, Alaska
Several juveniles seen along the shore of Ipswich Island - in the foothills east of Cape Lisbourne.

17 Aug Barrow, Alaska
2 juveniles seen north of VOTH's Area.

21 Aug - A flock of 6 juveniles were seen Footprint Lake; one was collected. Another group was encountered in Ray Lake. No others were seen except a ~~small~~ group at the South end of Family Lagoon. All individuals were juveniles & all were in the

Holmes, R.
1960

Erolia alpina

21 Aug Barrow, Alaska
of molting - both on the ventral surface (of under body) & on the back feathers. This is a post juvenile molt where the birds are going into fall plumage. The feathers coming in on the back & scapulars are grayish in color. No adults were seen today.

23 Aug Barrow, Alaska
Several juveniles seen along freshwater lagoon. All appeared to be in molt. One individual was heard in Central Marsh.

26 Aug Barrow, Alaska
Several juv's again seen along the lagoon. One which was collected was quite far along in its dorsal body molt. No adults have been seen for days now, and only a few juveniles.

29 Aug Barrow, Alaska
No Redback have been seen during the past three days in Central Marsh & vicinity. Two were seen this morning near fresh lagoon.

30 Aug - Barrow, Alaska
Two juveniles seen along fresh lake, One other was collected. It's

Holmes, R.
1960

Erolia alpina

30 Aug **Barrow, Alaska**
molt was nearing completion. Most of the back feathers have been molted; however the breast is still heavily spotted.

2 Sept - 1 seen + collected (a juvenile - in post juvenile molt) across from fresh lagoon. Most of the ponds are frozen now and so is the ground.

3 Sept 1 seen in Footprint Lake (collected - juvenile 3/4 through post juv. molt). Two others were seen at the south end of Family Lagoon. Both were juveniles.

4 Sept - 2 seen along Family Lagoon

Holmes, R.
1961

Erolia alpina

3 June **Barrow, Alaska**
Two or three displays heard along the beach ridge, south of AACS. One was seen & heard, just west of the gas line. Along the shore of Elson Lagoon, north of Wohlschlag Slough, 2 birds were located in company with 2 Sanderlings. Moving further north, 2 lone individuals were collected.

undul.

"flock"

4 June This was the most common sandpiper today. Many aerial displays were heard near VOTH, S area, Red bank ridge (w/ ridge of Pt. Point), and near Ikroavik. Along the shore of Family lagoon on the high areas where the tundra was exposed, a pair of RB were found. After watching them feed for several minutes, I collected 1 (a ♂ - #1082). As he lay fluttering, the ♀ walked up to him after a few seconds, stood next to it. Her head was held erect, tail depressed so that it was almost touching the ground (- it was not spread) but the wings were held in normal position. In this posture, she walked around the bird several times; no calls were heard. This ♀ (# 1081) was then collected. A third bird (♂) (1080) flew in & displayed in the air with trill, etc., then landed near the 2 wounded birds, peering around - in normal, possibly slightly upright posture.

parchment

Another pair was seen along Red-bank Ridge. These

Holmes, R.
1961

Erolia alpina

4 June Barrow, Alaska
were chasing eachother, tumbling around, running back and forth - for about 1 min. Finally 1 flew up onto the snow patch; the other came along behind it with the tail depressed & head held high. They both then flew off.
Other singles were seen & collected (all proved to be ♂♂). This period seems to be right in the middle of courtship activity. Some birds are paired; others are not. Chasing is frequently seen. This may be courtship chasing or territorial disputes.

PAIR L

5 June Numerous pairs were seen today along Elson Lagoon & in Voth's Area. All birds appeared paired & no "individuals" were observed. No chasing or courtship was noted (one pair was seen to chase a neighboring displaying bird). The RB seen numerous & are heard everywhere.
Birds were watched feeding today. Most were working the polygon tops or grassy areas & not the wet, flooded lands. They would feed by probing shallowly or picking at the surface. No deep probes were noted. The birds move rapidly & do not stay in any one spot for more than a second or two.

6 June One ♂ was watched as he fed. Suddenly he took flight, flying low over the ground

Holmes, R.
1961

Erolia alpina

6 June Barrow, Alaska
(4-6') and after 100 yards he set his wings in a V-shape & glided & trilled for another 50 feet before landing. No other bird was seen, but it may have been nearby. This individual also raised one wing toward the observer during the feeding period. This wing raising has not appeared before this year.

wing raise

The north end of the plot was walked this afternoon. The only RB present were 1 pr & 1 individual right at the NE end - see census sheets. The pr was observed flying east & the lone bird then displ. up to them & made them swerve back into their territory - so apparently some boundaries are now in effect. When the pr landed a couple of seconds later - the ♂ kept both wings held high overhead & walked a few steps & then lowered them & resumed feeding. Whether this is just a left over from the display flight or an additional signal, I do not know.

7 June Barrow, Alaska
One bird watched feeding and again great distances were covered. Feeding seems to take place both in the wet troughs & the drier, drained grasslands. The aerial trill may be given in its entirety on the ground with no special posturing. However, occas. a wing or more

feeding

wing raise

Holmes, R.
1961

Erolia alpina

7 June Barrow, Alaska

commonly both wings well be raised.

A ♀ was shot & wounded. The ♂ walked over to her directly & stood beside her - giving the aerial trill or the dreer, dreerr, dreerrr, note repeatedly. After about 30 sec, a ♂ announced nearby, & this ♂ took flight & displayed, landing about 15' away. He then walked back to the site where his mate lay & pecked occasionally. The dreer-ch was given constantly & an occasional trill was uttered. He remained within 4' of her & then for 15 minutes. Finally he flew up to a height of 6' - hovered & trilled & landed a few feet away from where he had been before. He then resumed feeding. He never did return to the ♀ & even though she was flapping occas., he paid no direct attention.

♂-♀ bond

The dreeerr note is one that is often given when the bird is alarmed. It is quite different from the kraa of the aerial-hover note in that this is more of a "rolled" note, while the aerial note is more guttural & harsher. The dreeerr note may be terminated in the trills which become more purry or musical in tone & which drops off in pitch, nearly throughout its entire length (10-20 secs). A better notation may be dreurrr, dreurrr. This vibrating note is given frequently.

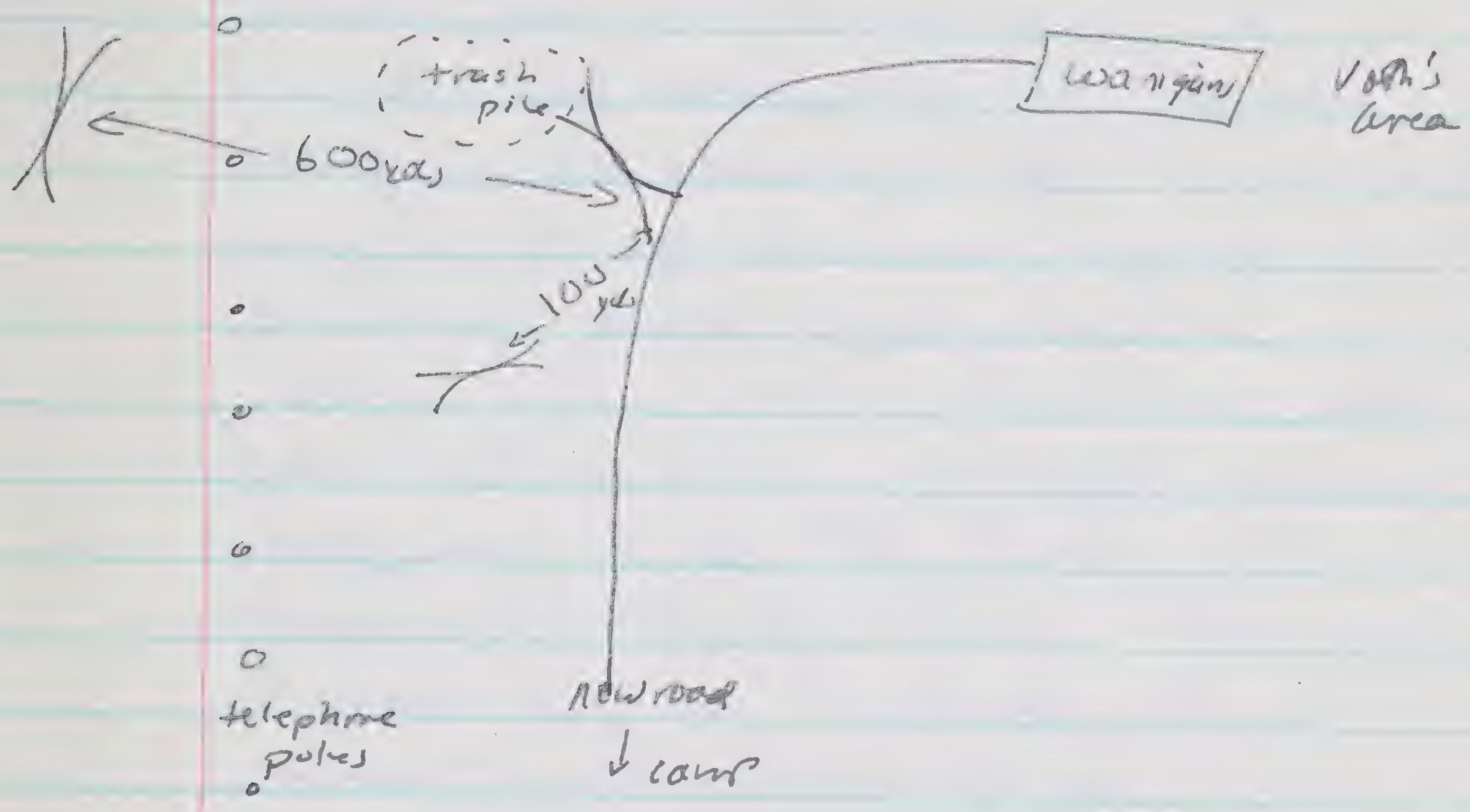
ground call

Holmes, R.
1961

Evolia alpina

8 June Barrow, Alaska

Red-backs were observed near the old A.F. site, east of Voth's area. At least 3 displ. birds (♂♂ presumably) were present.



chasing

Much chasing was noted. What is thought to be a courtship procedure was noted. The ♂ & ♀ would chase each other back & forth. The ♀ would crouch in a submissive-like posture & then would turn & jab at the ♂ & take off after him. They would fly awhile, then land & tumble around, flapping their wings together — or there would be a short flight where both birds flew close together, usually one behind & slightly below the other — as a chase. On several occasions the ♂ would walk up to the ♀ with

aerial courtship

Holmes, R.
1961

Erolia alpina

8 June Barrow, Alaska
his wings held at a 45° ∠ above the horizontal
& with tail slightly raised (~ ~20°, ...).
He would then follow behind the ♀ for
several feet & on 3 out 14 cases, she
turned and attacked him by thrusting
herself in his direction. The ♂ would break
away occasionally to chase a neighboring ♂
and would aerial display upon his
return & then would chase the ♀. After
about 15 min. of this riff-raff, one bird (♀)
disappeared & only the ♂ was left. He
continued to display & feed. After another
15 minutes or so, he walked toward the
weasel & sat in a nest depression about
6' away. He nestled in, as if to "round"
out the nest. He then acted disturbed &
finally walked away & took flight. I then
moved the weasel back 50' & checked
the site. It was a cup about 1½ - 2"
deep, with well-packed sod. There was
only a few pieces of dead vegetation
on the floor, while some lined the sides
of the cavity. Upon returning to the weasel
& watching, a pair of semi pals came
& began to make a nest in the same
site. So it should be interesting
to see what will actually happen.

gr. courtship

nest-cal. display

semi-pals RB - same site

Holmes, R.
1961

<u>Erolia</u> <u>alpina</u>

8 June <u>Barrow</u>, <u>Alaska</u>

After another 10 minutes or so, the same ♂ now began sparring with another bird. The chasing & tumbling around was the same as described above. There appeared to be an attempt at copulation - or at least 1 bird landed on top of the other. Both birds then moved apart, turned, faced each other, lowered their tail, ruffled their back feathers slightly, lowered their head and brought in their neck with beak pointing straight ahead & then charged each other & went on tumbling & apparently fighting. They then broke off, one bird flew off 60', landed near another feeding RB & began to feed. The bird which I had been following, already displayed - landed back near the center of his territory & began to feed. I am now wondering if all the physical combat is actually aggression between territorial ♂♂. However the wing-display & copulation are still to be explained.

p. 6 gr. agg

The <u>dreerrr</u> note can be given in the air, as one was given on a downglide after the end of the trill. Also the krrr & trill are given at

Holmes, R.
1961

Erolia alpina

8 June Barrow, Alaska
any time, independent of glide or vibrating wings. When hovering the wings are beat at an angle from horizontal down- in a [illegible] manner. The neck is pulled in, & the head is slightly tilted.

9 June RB were seen commonly on the plot today at Ikroavik. The birds appeared to be paired; and generally, there was little activity going on. On the beach ridge in the evening, a RB was seen flying & as it landed it gave a wing-up-display & trill to a semi pal which was about a foot away. The semi-pal crouched & ran off, the RB followed for a few feet & then turned & began feeding.

RB ♂♀?

10 June - 1 or 2 pairs seen along ridge when insect plots are being placed (No. of Traplines IV A+B) This area seems like it should have more of these birds.

11 June Only two prs were seen along Pitelka's Beach Ridge Census plot. A few were heard out toward Elson Lagoon.

12 June Several displays were heard in the main-sample area, N. of Voth's area.
(Calendar 10 June had laid 2 eggs, & I have laid 2 & had another in the oviduct).

13 June - Very few birds were seen between here & the lake, but on the Ikroavik Census

Holmes, R.
1961

Erolia alpina

13 June Barrow-Ikroavik, Alaska
plot, a good number seemed to be present. Display however were seldom & scattered. Only through a long time spent on the plot - could they be discovered.

15 June During an entire morning of driving only 3 were seen or heard - (during frequent stops). Two ♂♂ were collected; both had incubation patches. No ♀♀ seen - may indicate that all were on the nest, but even so, the general lack of RB activity leads me to believe that they are generally scarce this year.

17 June During a morning spent along the Beach Ridge, Central Marsh & Coastline Ridge, only 1 ♂ was seen (altho occas. other trills were heard.). 1 being on the Beach Ridge. In the afternoon - only 2 displaying ♂♂ were on the B.R census plot. One nest was located on the plot on the east side of the ridge. The nest was located in a grassy area - but the grass was not wholly covering the nest. & it was generally exposed. The ♀ did not do a mouse run, but flew directly from the nest & fed nearby as I looked at the eggs.

nest

A copulation was heard display No. 1 with's area during the late afternoon.

Holmes, R.
1961

Erolia alpina

18 June Barrow, Alaska
Several birds seen in vicinity but activity was poor.

20 June Barrow-Ikroavik, Alaska
Birds seen on Red-back Ridge & on down to the lake. Wing molt was well under way in most of these forms - see catalog & wings. Stomachs were generally empty - possibly due to the fact that these birds may have been incubators - who were flushed from their nest.

21 June One or two pairs displaying near the insect plots. In the area between the edge of Family lagoon and Barrow village road, no RB were seen. This area was cleaned out well during the early period & apparently the vacancies were not refilled. This same fact applies to the beach ridge near ARCS. Also, the birds do not seem to be defending territory nearly as actively as in the past. Very few aerial encounters have been noted all season. This general lack of activity probably reflects the overall lack of numbers - reducing density + therefore fewer encounters. Is it possible that with an early season, that tundra in the more southern areas opens up quickly & early with food abundance & that the

(margin notes: area shot out no filling; lack of terr. act.)

Holmes, R.
1961

Erolia alpina

21 June Barrow, Alaska
birds stop there & breed without coming all the way north? Of course, the problem which enters here concerns the paths of migration. This might hold for the RB but what route does the pectoral or Semi-pal Sdp. use. - it would be hard to involve this idea with these species. Is there a lack of food? It doesn't seem likely - in that there were not great number here - which left, but the season has always been poor, right from the start. The birds just never arrived. The Baird & Semi-pal actually seem to be exception this year; their numbers seem more normal. But RB & Pectorals & so few White-rumps are present in lower numbers.

24 June - went on a RB hunt south of Wohlschlag to catch sloughs today. 6 were seen, 5 collected. The stomachs were quite empty - but this may be because we were getting incubating birds. One bird was observed feeding for 30 sec - during which time he pecked 6 times & probed twice. He moved only 2' & was feeding in a sedgy - pond edge margin area (S.O.S. - #28). Only 2-3 displays were heard today; the wind seemed to curtail the outbursts -

feeding

Holmes, R.
1961

Erolia alpina

24 June Barrow, Alaska
walking the tundra, seen all the more clear. Wing molt is progressing rapidly; nearly all birds are in some form or another.

25 June A nest was located east of the B.R. - towards Salt - float plane lagoon (see map - RB₂). It was located in the center of a large grassy-sedgy field - surrounded by old grass. 2-3" high - 4 eggs. ♂ was incubating; ♀ not seen.

26 June A nest with 4 eggs found 200 yds east of the receiver site along the B.R. road. Both ads were present both had wing molt. The nest was in tall grass, between old weasel tracks - & was lined with grasses

27 June Only 2-3 birds (pair) were seen on the census plot at Ikroavik. The numbers were noticeably down. On the trip across the north end of Ikroavik to an area SE of Footprint + then north into FTP - only 1 bird was seen. It was collected and turned out to be a bird which I BANDED last year near Ikroavik - on 9 July 1960. So now I have a bird skin of known age - for feather characteristics & I know they breed in their 1st year.

Holmes, R.
1961

Erolia alpina

~~4~~ July Barrow, Alaska - PM
A nest located 30' east of the new gravel road to UAR - almost to the towers. Located in
hatch - tall grass, it contained 3 young + 1 piping egg. The adult was very excited + went into her distraction display - when she humches her back feathers - droops her wings (not spread horizontally + goes shuffling off over the tundra giving a thin squeaking note. Once she? returned + did a partial aerial display then went into the display.

4 July - AM Only 1 bird was seen on FAP's census plot - see census sheet. The nest near stake 5 was present, but the eggs were cold + no adult was seen in the immediate vicinity. The nest to the north + east of the B. R. - had been destroyed - all birds were missing. A pair was collected over close to the POW site. The ♂ was starting molt on the mid dorsum. - Only 1 display was heard all morning or afternoon. ~~None~~ Few were seen in the afternoon near UAR. (see above).

One bird watched feeding in wet trough in low polygon area - 16 pecks in 15' of travel. - N. B. Ridge.

Holmes, R, 1961

Erolia alpina

7 July Barrow-Ikroavik, Alaska

1 pair + 2 indiv. Ads seen on the plot at Ikroavik. 1 Ad + 1 chick seen + collected on the grassy area, west of Footprint Lake. 1 group of 3 Ads seen feeding together just east of 4.0 on the plot. When flushed, they flew off together + landed 30 yds away + resumed feeding. Another group of 3 Ads seen on the ridge slope — 100 yds east of the main plot. All were feeding within 3' of each other — + again flew off together. Are these birds with nest failures?? They certainly must be non-nesters — since the young can't be raised yet. No displays were heard today.

group behav.

9 July Barrow, Alaska

The nest on the B.R. plot which contained 4 cold eggs on 4 July — had been destroyed by today. One piece of egg shell was there — + this showed signs of breaking — not hatching! — as if predators had taken them. Two displays were heard N + E of 0.0, + 2 were heard E of 16.0 — there were probably 2 birds involved here, each displaying twice. The display was over the tundra — no cross — each was given

see clutch

Holmes, R.
1961

Erolia alpina

9 July Barrow, Alaska
The nest on the No. B.R. - along the road is still intact + the one bird was seen - the incubator. Another pair was noted just as the road reaches the top of the B.R. - may be a nest nearby. None were seen between the B.R + Olsen - Wohl-ecology Area.

Flocks of 3, 3, + 4 were seen N + W of Voth's Area + just east of Trapline IV A+B - These were all concentrated around mud-bottom ponds. One group was collected - 2 ♂♂, 1 ♀. These appeared to be non-breeders - or those who had quit - since all had brood patches.

10 July A pair watched, a ♀ gave a distraction display - as I collected her mate. They showed no concern + flew off after a minute or so - are these still breeding? - Another group of 3 birds were seen feeding in a black-mud pond (2' mud exposed on edge) - near Voth's Area.

13 July 2 family groups encountered between Wohl + Ookpik sloughs. In 1, only 1 adult was present - 2 chicks seen, 1 ...

Holmes, R.
1961

Erolia alpina

13 July Barrow, Alaska

collected. They were feeding in low polygon - grassy area with no water nearby. The 2nd group consisted of 3 young & both adj. - The young were banded - These were feeding near a Pond. Two flocks of RB were also encountered - one of 4, one of 5. Two were collected from each flock. These were nearly all molting. All had wing & tail molt. During the past sev. days, all birds seem to have dropped their central tail feathers & some are molting other feathers from the midline out towards the periphery. Wing molt continues, so that most birds are now molting the 3 or 4th feather from the distal end.

Several displays heard to day - mostly from the disturbed family groups. The distress call - at which the young freeze seem to be the raah, raah, raah .... call - this is interrupted - breeep... then more raah......

Two birds were seen just east of Trap IV - A - B - at the mud-bottom pond. One was watched feed - see feeding record sheets. None were seen - Footprint Lake.

Holmes, R.
1961

Erolia alpina

13 July Barrow, Alaska
The RB nest along the road to the BR is still intact & the ♂ was incubating.

15 July Two RB were feeding again on the black mud on the ponds just N + W of Voth's Area - proper. They either feed in the mud itself or back among the grasses growing at the edge of the mud. All feeding was done by rapid probing, usually with 4-5 probes in succession, a break with head raised slightly - then returned to probing. One flew over ponds J, H, + I - but kept on going. One partial display heard today - from the whinny. The wing molt seems to be about completed.

feeding

16 July 1 bird remained at the mud ponds. This was the only RB seen during the afternoon. The nest along the road toward the B.R. had apparently hatched, for all signs of the bird were gone -

nest hatched

19 July - Flock of 5 near corner of Wahl- + Elson - 4 calls - see journal - catalog. 2 family groups encountered. - 1 young collected, 2 banded. Those birds feeding at soft mud ponds will probe - drill-fashion, for their food, while those feeding in grassy areas will pick or peck + not probe -

flock

Holmes, R.
1961

Erolia alpina

21 July Barrow, Alaska
One ♂ + 1 flying chick were seen + collected in Voth's Marsh. The ♂ gave the whining-like note when disturbed. The juv was just flying. Another family group of 1 ♂ + 2 chicks was seen in the lower end of Footprint - feeding in the marshy area so. The Ad + 1 chick were collected. - Both juv's were flying. These 2 ♂♂ attending broods showed no body molt, but brood patches were losing their vascularization + were generally regressing. The trill portion of a display was heard, s.o. of Voth A - during the evening. In the same area a large flock of RB - 12-15 in number were seen with a group of ~8 Golden Plover feeding in the low polygon - wet troughs areas between Voth + Footprint. None were collected due to their great wariness. 1 Ad (with a chick) - was collected.

flock

23 July Barrow, Alaska
None seen near Voth's Area in the afternoon. In the evening one Ad seen along the B.R - near where Nest # was located. None were then seen until 2 feeding at a Arctophila pond at the corner of

Holmes, R.
1961

Erolia alpina

23 July **Barrow, Alaska**

So. Wohlschlag & Elson [1 coll]. One of the was seen flying in this area. The next was seen alone near the edge of an Arctophila pond with Dupontia marsh - just N of ootpik & due So of the fertilizer plots.-coll. Finally, a flying juv. was seen in the so. end of central marsh. -coll. Total RB seen = 6, incl 1 Juv.

Most of the birds seem to be feeding at the pond edge or in wet marshy fields. Unfortunately the stomachs of the 3 coll. above - were almost empty - so little food habit data was obtained. This is a general conc'd however - that birds are now feeding in the lowland - as opposed to the troughs & polygon types.

24 July One Adult (♂) & 2 non-flying chicks were seen & coll. in central marsh just north of the census plot (but in the marsh). The ♂ gave a strong distraction display, fluttering away with wings outstretched, & uttering the whimpering cries.

26 July -One flock of 11 birds seen feeding in the ridge area 200 yds west of the wanigan at Ikroavik. 7 of these coll - showed adult Tipulids, beetles, - occas. small olive in their gizzards. In watching these birds

Holmes, R.
1961

Erolia alpina

26 July Barrow, Alaska
Feed, it was noted that all indiv. were feeding or picking at the surface or at the vegetation & no probing was noted. This was true of two birds that were feeding along a marshy-upland pond-edge.
Another flock of 6 was seen feeding in the marshy area SO of the 1st lake, S of Footprint. No other birds were seen during the entire morning.

30 July None seen in the tundra today - during a cruise to Wohlschlag & So. Wohlschlag.
In the late morning, a flock of 18 was seen N. of Birnick along the pond-shore. All were adults - no immatures. - 5 were collected.

31 July A flock of 18 (16 Ads, 2 Juv.) - seen feeding near the west end of Transect III A+B. The 2 Juv. & 2 Ads were collected. All were feeding at the edge of arctophila ponds.

2 Aug 1 flying juv - by himself - was seen & coll. No. 1 Footprint lake.

3 Aug A flock of 15 - all Ads seen No. 1 Birnick, 4 were coll.

4 Aug 3 indiv seen near Voth's area, 1 was collected. All were feeding in the wet marsh ponds.

Holmes, R.
1961

Erolia alpina

7 Aug Barrow, Alaska
Trip to new census plot, so. of Ookpik slough. 1 flying juvenile was coll. about half way between Ookpik + Wohlschlag - feeding in the wet marshy flats. This was the only Imm seen. So. of Ookpik, 2 flocks were encountered, one of 15 + one of 8. These consisted entirely of adults, some of which were well along in molt + other which were showing no signs external of the molt. Sev. were coll.. On the return trip, a group of 9 was encountered in Ookpik Slough. All birds were feeding in wet marshy areas, where there was standing water.

feed

8 Aug - 2 flying Immatures + 2 adults seen together No. of Ookpik's Area. These were feeding through the wet marsh areas. Another group of 4-5 adults was seen nearby + a lone juvenile was seen near Pond M - + coll. A couple of the adults seen appeared to be in quite good plumage (summer!).

9 Aug - Several flocks encountered between the Ookpik road + the insect plots. One group of 30 adults was found quite close to the plots. These were feeding on the slope or in the wet-Arctophila ponds. Two juveniles were seen near these

Holmes, R
1961

Erolia alpina

9 Aug Barrow, Alaska
ponds also. About 10 [illegible] seen on the gravel area near Brittons' trees - 2 were collected. During the observation plots - recording, [illegible] calls of RB were heard. Some of these flocks were quite far along in molt.

11 Aug A couple of individuals seen near the Ookpik census plot & 1 imm. was with a flock of pectorals in central marsh.

12 Aug - 1 Adult seen near ~~fertility~~ insect plots

13 Aug 1 or 2 RB's heard during afternoon near insect plots.

14 Aug Small flock (5 Ads, 1 Imm) encountered on South side of gas line ridge. - none coll.

15 Aug 1 Ad + 2 chicks (with down still on head - but flying) collected N. of footprint. The adult was a ♂. Another lone chick RB was found associated with a flock of dowitchers on the south end of footprint.

16 Aug - None seen near insect plots

17 Aug - None seen between camp & ookpik, but 1 Ad & 1 Juv were seen near the fertility plots during the late evening. These were feeding in the marsh.

Holmes, R
1961

Erolia alpina

18 July Barrow, Alaska
A large flock of 40-45 found in the low polygon - wet trough area just N. of Ookpik near the crossing. 5 birds coll. - 4 0 Ad., - 4 ± Young. All feeding with shallow probes or pecks at the surface. Juv + adults all in molt, the adults being quite far along.

20 aug None seen near U of M's Area. Two Immature collected near fertilizer plots - by Chamberlain

22 Aug 2 Immature seen near the same N. of the duck camp - these were feeding near the flock of phalaropes - no adults seen.

27 Aug - None seen during the past days - but a small group of 8-10 molting adults (mostly in C-D stages probably) - were on the Ookpik census plot.

Holmes, R.

Erolia alpina - molt

18 Aug Barrow, Alaska

Primaries - 11

#11 is vestigial - has greater covert

molt proceeds from #1 → #10 (+ prob. #11)

10 grtr primary coverts - #11 is missing -
there seems to be a smaller carpal remex in
its location

Secondaries - diastataxy - 5th secondary covert
is present without 2ndary

- appear to be 14 secondaries - all at tertials [illegible]

outer 10 molt in sequence inner 4 molt
from proximal end to distal
ie #14 → 11.

Tail - 6 on each side (incl. central
feathers)

#7 primary closely correlated with
The central tail feathers

- underwing coverts molt late - see #1283 - where
Prim #9 is almost complete - Secondary u.w. cov. are pins

Holmes, R.

Erolia alpina - molt

18 Aug Barrow, Alaska

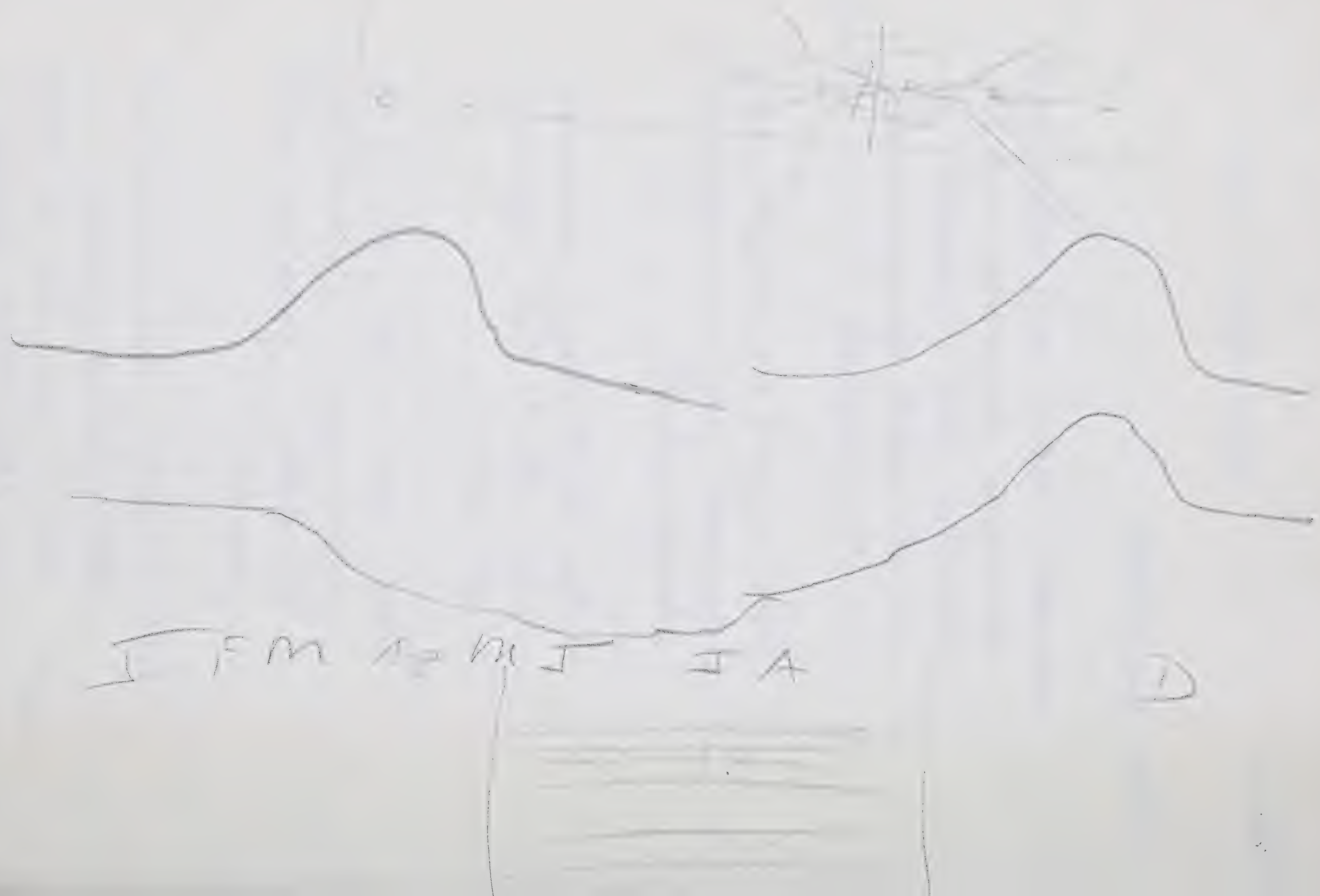
wing molt - prim. 10 in D stage when secondaries are complete + at the same time tail is complete. So prim #1 starts appendage molt + prim #10 concludes " " . See 1280.

There is quite an overlap in body-wing molt, but wing molt is started first.

When molt nearly completed - fat starts to be deposited See 1290

last area on body seems to be belly region - even on 1280, @- the entire body was still in molt.

Post-Juv molt · seems to start in the center of the back + scapulars. no molt on rump, sides of breast just behind dorsum but center of breast with no molt. lower neck molting but none on upper neck or throat
#1291
- no molt on wings (incl. coverts) or tail. no molt on upper or lower tail coverts



Holmes, R.   Erolia alpina molt

18 Aug   Barrow, Alaska

Post-J-w molt seems to start on the scapulars—
Then mid dorsum, belly, ja, + crown lastly the throat

Holmes, R.
1961

Feeding Data

Erolia alpina

7 July Barrow, Alaska

Ad. with chick - feeding in grassy plains on west side of Footprint Lake. - Ad picked or pecked 8 x in 40' - no probes made - collected as #1152.

9 July Barrow, Alaska

Group 3 in Pond to a mud-edge pond - N. & W. of Voth's Area & just E of 0.0 of T-IV A. Grass rings the pond but there is 6-10' of mud on the E & W. sides. 1 Bird watched feeding as follows.

30 sec.	- 30 peck-probes	6' - at edge
" "	- 23 " "	- 2' " " - belly deep in water
29 "	- 33 " "	- 1' - " " - " "
25 "	- 19 " "	- 4' to edge of water
52 "	- 41 probes in mud	- 5' - " " ", belly deep
31 "	33 - probes	" "
197 sec		

peck-probe is a partial stab - not full probe. In this case a full probe meant the head was put under water. Weather bright & sunny. Time 1500-1515.

10 July More observation in the same area as above, except only 2 birds present - & feeding.

1450 - bird feeding in 2" of water:

120 sec - 58 x - head lifted but probes were made 4-8 x (m=5) per head down -

Holmes, R
1964

2.

Feeding Data

E. alpina

10 July Barrow, Alaska

seemed to be swishing mud with these short sequences of rapid jerks. Head underwater - stayed in < 2 sq. ft. area.

225 sec - 111 x - lifted head - again with motions as above. - moved 5' from deep water to shore - where it pecked once or twice & then back into deep water after 2 sec spent in preening.

1501 - bathing - by bouncing up & down & splashing water up onto the feathers - - dip head in - flutter wings - i.e. ruffling feathers - then picked at feathers with the tip of the bill - flew up on the bank - fluttered & began to preen.

1505 - walked 11' away from pond & stopped again to preen.

Holmes
1961

Erolia alpina
Molt

12 Oct

Juveniles can be distinguished by the buffy edging of the upper wing coverts + by the non-molted rump area which appears to have feathers with rusty or at least "lightened" edges - as opposed to the adult gray color.

The juv. is considerably darker on the breast + across the throat. Throat of juv: dark sooty gray with white chin - no ruddy patch post. to eye. Under wing coverts at bend of wing - are dark for leading 2-3 rows (which in adults only a faint ~~light brown~~ gray is observed).

One juv showed the 2-3 outer rows (ant) of coverts to be non-molted - as well as the 2-3 more inner rows - but those in between were gray (H).

Holmes, R.
1962

Erolia alpina

29 may BARROW, ALASKA

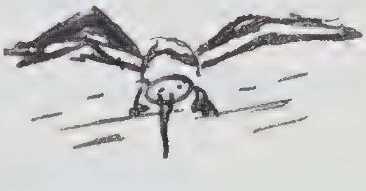
1 individual seen feeding in the small grassy areas on the west shore bluff of Elson Lagoon. The bird was a ♂ & when disturbed, he would fly over to another patch of tundra giving the trill rah-rah-rah-rahrahrah. This was seen twice & then once he gave an unevan-loud trill

eyaheeee~~~~~~~~~~~~

The bird was feeding by pecking at the surface of the tundra & by short probes (permafrost depth 0 -> 1½ inches in the mossy-lichen-grass area).

Another individual displayed aerially near the missile tracking site (VOR tower) - gave a long series of cree, cree, cree trilleeee (+ the trill)

30 may Flock of 7 seen near Elson - Ookpik. Several of these were giving trills on the ground or when they flew. When one flew into the group & gave the trill, one feeding bird raised its wings, trilled & ran toward the new comer



Holmes, R
1962

Erolia alpina

30 May BARROW, ALASKA

flock of ♂♂?

-both then went into a aerial chase. Then the whole flock flew - all chasing & trilling. One peeled off & beg the shallow wingbeat - & gave the kraa, kraa - This appeared to be a flock of ♂♂ - which are yet unsettled.

The harsh rol, rol, rol. is given on the ground - when the bird is alarmed - it may then turn into the kraa, kraa of the aerial display.

Ground courtship

One bird doing an aerial display, landed, keeping both wings at rt. ∠s with the ground & gave a severe trill. Then folded wings & began feeding. Suddenly - it gave several kraa's & walked up behind a feeding dunlin (♀?) raised one wing to 90° - (body was facing to the side - not to ♀) & gave several more kraas as he walked behind this bird. Finally the ♀ flew off for about 10' - & both birds resumed feeding.

pair?

Pairs

Pairs seen near Britton's Area, near Voth's area, across from the missile site (Voth) on the south shore of Voth creek; just beyond Denali Gate & on the bluff along the west shore of footprint lake. Numerous aerial displays were heard during the day.

Holmes, R.
1962

Erolia alpina

30 May BARROW, ALASKA

One bird gave the following sequence [on] the ground when he first observed me:

Pēē - ti - deeeeeeeeeeeeeeeeeeeeeeeeeee

There is an upright alert posture which the bird assumes when aware of "something" going on - & usually the obs. [illegible] & occas the kroa is given from this position

Watched what apparently was courtship this evening. Two birds - a ♂ & a ♀ were seen squatting on the ground with their feathers puffed out - they would face each other - then the ♂ would

♂ - ♀ ground disp.

Holmes, R.
1962

Erolia alpina

30 May BARROW, ALASKA

rush forward toward the ♀ + she would turn & fly off for several feet - then the would be repeated. Occasionally - there would be no flight but the birds would keep on running in short spurts. Once one of their short flights ended in the snow - both birds hunched down + fluffed themselves out - situated 3-4" apart + facing each other. - They then would flutter about together - finally taking off + flying for 30+ sec. - the ♂ giving a long + drawnout uneven trill. This went on for at least an hour + bits of it had been noted this afternoon. No wing-up or tail-up postures were noted. Many of the dunlin are seen in pairs already - could these "eroline" courtship displays be part of their early courtship - + are : not seen now or is there a completely different type?!

Holmes, R.T.
1962

Erolia alpina

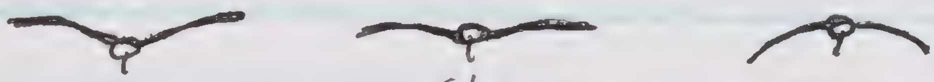
1 June BARROW, ALASKA

Elson Lagoon bluffs - between Wahlendorf & Isatkoak Sloughs: 1 bird as it became aware of my presence stood upright (upright posture) - ran to a nearby mound & again took this posture. Then flew up - aerial display & part of trill & then landed with both wings over head. Frog displayed & ~~[illegible]~~

landed near feeding RB's (flock of 6 nearby) - gave trill as it landed - & kept wings up & continued to give the trill

Wings up display

In aerial display - the wings may be held in several positions:



(a) (b) (c) The latter (c) is the most frequent & is the posture in which the wings are vibrated rapidly & the kraa, kraa call is given. When the bird is going to descend, the wings are set at

Aerial postures

and the bird glides or swoops to the ground. The wings are usually held at this angle (perhaps even higher

for about 1-2 seconds. They are then folded in place & the bird begins to feed.

Two to three flocks (6, 8, 12 birds) were seen in the area today & a number (4-5) displaying birds which were

Flocks

Holmes, R.
1962

Erolia alpina

1 June Barrow, Alaska

continually chasing these flocks as they came into territories. These "more or less settled" males would fly into the flock - as described above - display - chase individuals - but none seem to pay much attention. Eventually, the displayer would calm down & begin to feed. If another local bird displayed nearby - the displayer now amongst the flock would fly up & chase the other. (∴ evidently these are settled birds & not just members of the flock - who were starting to sing. Also, these did appear to be single birds - although with most of these displays - it is usually possible to find a ♀ in the vicinity.

display in flock

It therefore seems that these flocks are moving in - ♂♂ are settling down - some have mates, others don't (possibly some of the chasing in the flocks by the settled displayer is part of courtship?). The territorial rights are not as definite & absolute as they will be soon.

flock composition

Male seen running toward ♀(?) with one wing held vertically (right wing - as in previous times this was seen this year - also toward wind).

7

Holmes, R.
1962

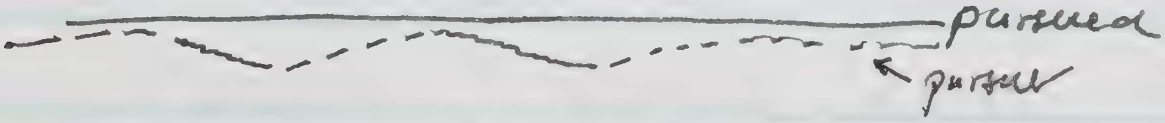
Erolia alpina

1 June Barrow, Alaska

head up, but not extended, tail in normal position. The other bird flew off several feet - he remained standing upright with both wings raised - after sev. seconds he took flight - landed near her - kept 1 wing (rt) up & gave a soft trill (similar to aerial trill but not as loud or as resonating). She ignored him - then both birds resumed feeding. This probably was a pairing display - ???

♂ → ♂ aerial chase

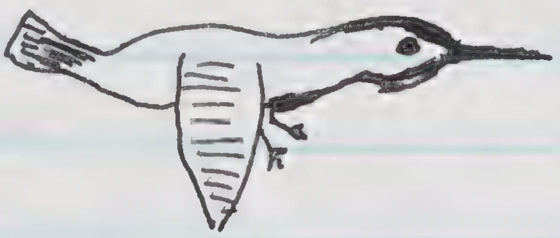
A long aerial chase - with 2 birds involved - was seen. The birds were flying low - usually about 3-5' from the ground but occasionally to 10' - swerving from side to side - going in circles - shooting up in the air & then turning & flying off in another direction. The bird in pursuit (♂?) would give part of a display - for very brief periods of time (i.e. shallow wing beats & parts of the trill) - then he would resume the deeper wing action to regain the distance to the other bird. The displayer would usually



fly below, slightly behind the pursued. Once these 2 landed near 2 other birds & one of these already on the ground - extended both

Holmes, R.
1962

Erolia alpina

1 June Barrow, Alaska
wings to the side ; tail slightly elevated + walked toward 1 the chasing birds  Aggression or courtship?

The two birds then got up - flew + chased again. One bird then went into a territorial announcement after which he landed near the bird he had been chasing + both birds fed. Then the displayer walked toward the other bird (♀?), raising the right wing - tail held in normal position - head up + gave the soft trill. The ♀ kept on feeding; finally the ♂ began to feed.

A pair seen on Britton's Area - 2-3 pairs between Britton + Joh's Area + a flock of 9 individuals with 5 pectorals + 1 baird east of the marsh site. Displays were heard quite frequently during the day.
Alert note: whit-whit

Holmes, R.
1962

Erolia alpina

2 June Barrow, Alaska

1 group of 3 was noted near Wobblebloo lagoon – otherwise only pairs + singles were noted. Displays + chasing was quite noticeable. Several chases involving 4 birds was noted - apparently 2 pairs were involved. It is quite frequently to see 3 birds - ie the mate of the defender following him as he chases the intruder from the territory – but at this season – pairs of birds are moving + these are chased out by both members of the pair. The ♀ usually flies immediately behind the displaying ♂ + as far as I can ascertain - the trills given are all by the ♂.

Some chasing + seemingly aggressive action was noted between two birds. Two birds were seen on the ground (+ adj. snow) one was chasing the other who would run several feet + then fly to another open patch of ground - it would be followed by the aggressor (♂?) who would assume the following posture - after landing: head forward - partially (actually horizontal) extended; back feathers ruffled tail + wings in approximately normal position: legs partly bent - given a crouched appearance. In this rodent-run-like posture - the bird would run after

♂ - ♂

Holmes, R.T.
1962

Erolia alpina

2 June Barrow, Alaska
the other - causing it to fly up - then both would go to a nearby mound or take part in a long erratic chase.

Several pairs + displaying birds were seen near Pitelka's + Britton's areas.

3 June Flock of 7 along Elson Bluffs + several settled + displaying birds. The aerial display can be given - quite deliberately: a kâ-raw, kâ-raw, ...

4 June Displaying birds are seen in all the exposed areas (which are good Dunlin-habitats anyway) + considerable chasing is noted. I still believe - much of this is intra-pair behavior where the ♂ follows the ♀ - he flys rapidly with strong deep wing-strokes + then (gliding in) sailing swiftly with wings at 45° - giving his trill. - then resuming the rapid flight - + switch up + down at again

♀-♂ flight

In this V-wing post the bird is tilted back + may swerve rapidly from side to side in an erratic manner. When the pair

landing display

lands - the ♂ keeps his wings raised for several seconds, lowers them ruffles his body as the wings fall into place on by itself. He may give a trill while his wings,

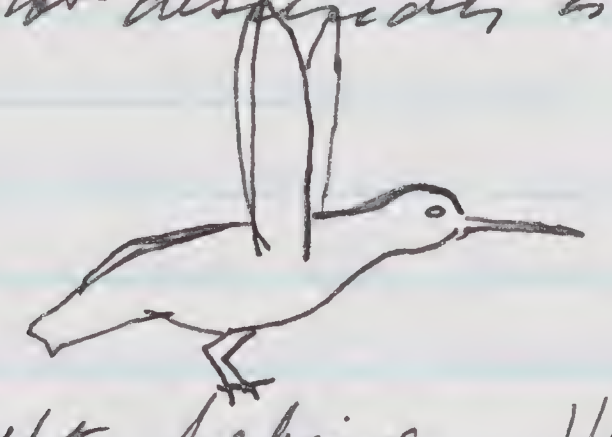
Holmes, R.
1962

Erolia alpina

4 June Barrow, Alaska

are raised.

In another action an aggressive display of a displaying (♂) was noted. In this case a flock (the only one seen today) was feeding along the edge of a partially thawed pond. The ♂ flew in after finish an aerial display — with wings set at 45° & gliding swiftly — he landed near the birds - kept wings up - ~~gave~~ put bill forward & gave a loud trill which lasted about 3 sec (- fairly even in pitch & tempo - not descending as aerial trill does).



He then ran after 1 member of the flock - which took flight with the ♂ right behind. He flew off swiftly - giving a loud undulating & grating trill - the bird then set its wings turned & glided down to the ground.

There does seem to be a fine distinction between aggressiveness & courtship - but in aggressive action there is a stronger & louder trill - compared with the more purring-like call given during courtship - also the trill is done in aggression which is

♂-flock? (margin note)
aggression? (margin note)
Agg. vs courtship (margin note)

Holmes, R.
1962

Erolia alpina

4 June Barrow, Alaska

is usually in normal position (or slightly raised in courtship?). Also in many aggressive or territorial displays the ♀ may follow the ♂ (the displayer) as he drives the intruding individual - place - then from the area.

The ♀♀ can also give the aerial trill - but this has only been seen from individ. on the ground & a ♀ doing an actual aerial display has not been recorded.

5 June - Several displaying birds seen along the Ook Road - as well as 2 flocks (8 & 13) - one near Ugh Area - one on the high ground S.W. of Br. Hom's Area. No aggressiveness or displaying was seen among members of the flock - all fed together - flushed at the same time & only the call note was given. Once a displaying bird flew into & landed among the group - flying in set wings & giving the loud trill. After he landed - both wings were held up for about 4 sec. - then lowered into normal position - but head was held high. Then one wing was raised slowly & a trill was given when the wing was vertical - this was directed toward one member of the flock (both ♂♂); the other bird flushed off in fear feet foreseemed

Holmes, R.
1962

Erolia alpina

5 June Barrow, Alaska

Feeding - The displayer folded his wings & then flew off to give a aerial display. Apparently, he tolerates this group of feeding birds with only occasional "pangs" of annoyance or hostility - which result in a partial display.

In the flock of 8 - there were 3 ♂♂; 5 ♀♀ - classed by bill size. Some of these birds as well as others during the past week - appear to be grayer on the back - ie the feathers have white or gray edging - whereas others are very red. - See specimens.

A pair was watched - in courtship flight - both birds landed & began to feed. Suddenly a 3rd bird flew in & landed - The feeding ♂ - raised both wings & lifted his head, giving the loud trill - flew low over the ground (just at times) then setting wings in narrow V. Before the displayer arrived, the intruder took flight & both birds went flying rapidly over the tundra. The male in pursuit would fly fast - set his wings & glide swiftly along behind the other - all this while giving the trill. It finally came to a landing at the end of

ground [illegible]
[illegible]
↓
[illegible]

Holmes, R.
1962

Erolia alpina

5 June Barrow, Alaska
one of these glides - both wings beating - then lowered & its base turned a ran about 4' back to the ♀ - at which point - both began to feed.

6 June One displaying RB on Saved Plot - several in Britton's Area - 3 pair on exposed area along village creek - 2 pair so. of Ikroavik Plot. Map below - shows area of exposed tundra - No's in circle - indicate # 1 pr.° for flock 1 Pr

Holmes, R
1962

Erolia alpina

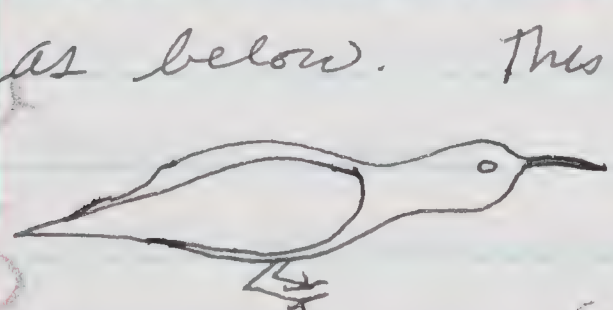
6 June Barrow, Alaska

No other parts of the tundra are open enough to support birds. This indicates there are but 17 pair of birds now settled - with only 2 or 3 relatively small flocks of birds present. Since the activity is concentrated in these open patches - the density seems higher - presumably - more are around all the time. It will be important to follow 1 pair from the time of their arrival until they depart - or at least until they have eggs. - How long does it take to court? - Is this period flexible - or does it last a certain definite length of time?

Behavior

Two birds were observed during alternating aerial + ground chases. The chaser assumed a head forward - not extended - no ruffled back feather - tail + wings held normally - posture as below. This was the ♂ - who then followed behind the ♀ running + then stopping - running - again.

♂ - ♂ gr. + aerial ch (wide pred)



The ♀ maintained also a normal posture with head held high usually - except sometimes in the run - she would put it forward - like the ♂. As he runs toward her - she may either run off

Holmes, R.
1962

Erolia alpina

6 June Barrow, Alaska

or take flight - which results in one of the erratic aerial chases. At times - she may jump into the air - several inches & the ♂ may follow suit or remain standing - Sometimes when he is charging - she may do one of these jumps. He will go under her - she will land - by this time he has turned & is charging again - she will jump & this leap frog maneuver may go for up to a minute. Usually both birds end in the air - with - float of wings - then flying off in an aerial chase

The running bouts may cover 50' or 80 in 5 minutes - while the aerial component usually stayed in an area 300 x 150'. The ♀ may turn & chase the ♂ - & when she does so - she assumes his posture - but she was never seen to make any noise. The ♂ will give the trill - during the ground chase. At times this is the loud aerial - type call & at other instances - a softer tree, tree, trees is given

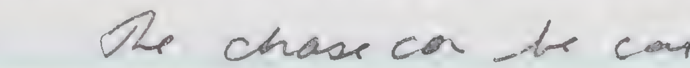
After this had been going on for about 30 min - a third + feeding bird was encountered during one of the ground chases - both members of the pair

Holmes, R.
1962

Erolia alpina

6 June Barrow, Alaska

Took flight after him - the ♀ following behind the ♂; the ♂ giving the loud ringing trill & as they flew low over the tundra - the ♂ displayed a decanter wing. At this point the ♀ rushed at the displaying bird - & the pair swerved off to the side landing & began again the ground chasing. The 3rd individual landed nearby & resumed feeding. Apparently - the intensity of courtship was stronger than area defense - since the two birds kept chasing each other for the next 10 minutes; these both were then collected.

The chase can be categorized below where [] the solid line is the pursued - which runs until the pursuer catches up with it - then it jumps ahead - then a foot or two & runs off - which the other bird follows it - only to displace it again. After a series of these - an aerial component is interjected - then more ground chasing. (3:1 ground time to aerial time).

These two turned out to be two ♂♂ (1554, 1555) - so this was a ground chase - involved in ♂ to ♂ contact & aggression. This must be checked further.

Holmes, R.
1962

Erolia alpina

6 June Barrow, Alaska

One bird seen giving a aerial display & then landing among a flock - wings were held up - back - head was kept - tail in about normal position & loud trill was given :. this is an aggressive display - toward intruder birds

This same display seen again a few minutes later (another bird) - given to a single bird - which immediately ran off - very difficult to tell if this was aggressive or courtship.

Three birds seen chasing - 2 landed - the third kept on flying. One of the landing birds kept both wings up as described above but his tail was cocked - to 45° ∠ with body axis - & then followed the other bird in this position for 3 sec. - Then both began feeding - courtship or aggression?

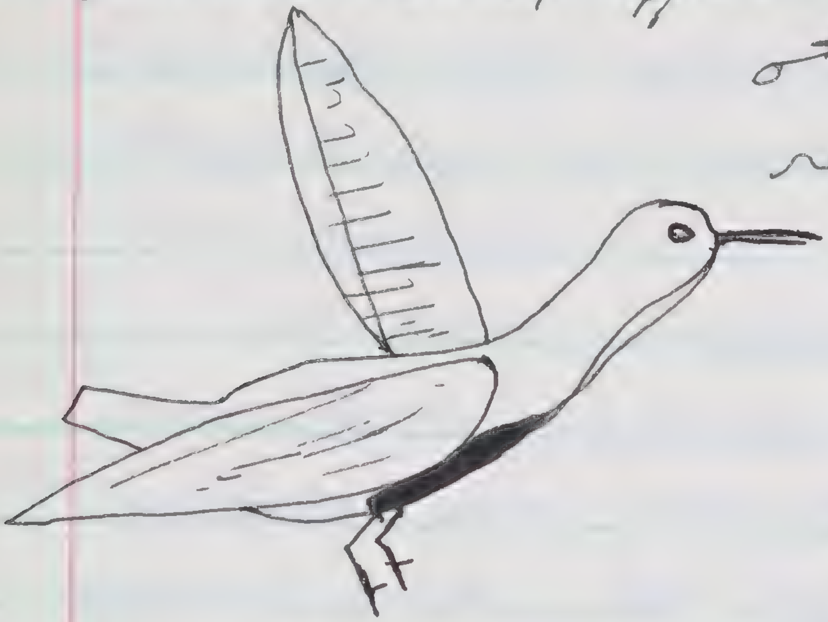
Flock of 4 was watched 1 was washing in small pond - 1 was feeding & 2 were chasing. Of the latter - the pursuer (appeared to be ♂ - by bill) was walking with one wing raised

Holmes, R.
1962

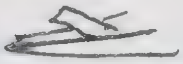
Erolia alpina

6 June Barrow, Alaska

vertically (tail slightly raised - ~ 25° above body axis) and walked + ran for short distances behind the ♀ who was moving off in one direction. The

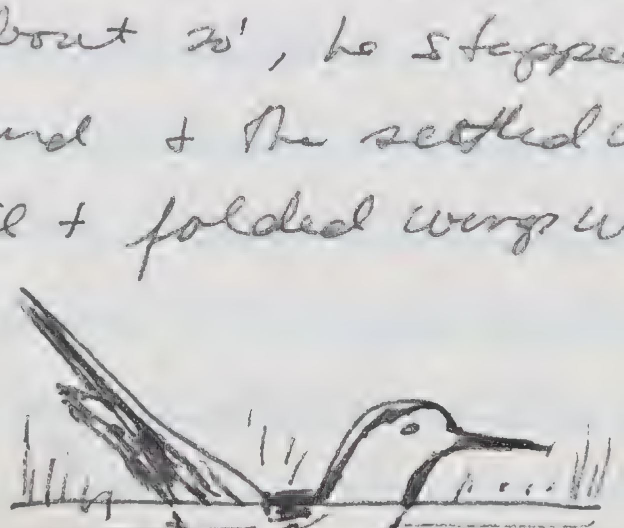


♂ gave a soft - often-repeated trill. Then flew for short distance - 3 times - each time, upon landing, the ♂ assumed this post with wing pointing off to the side - the ♀ being in line with him. A minute or two later - the pair flew + landed again - but this time both wings were folded + held in normal position - the tail remaining slightly elevated



Nest cup display

A few minutes later - the displaying ♂ who had fed for a while started running in one direction - with obvious purpose in mind. After about 20', he stopped on top of a grassy mound + then settled into a cup - the tail + folded wings were held high - the white undertail coverts being very conspicuous (to me). The bird turned + faced



Holmes, R.
1962

Erolia alpina

6 June Barrow, Alaska

Several different directions (W-SW-So. & SE) & after about 60 sec - steady - stepped out of the cup & walked away feeding. The ♀ was about 30' away during this ceremony. [The bill was open several mm during this stay in the cup - but from where I was - no sound could be heard].

The cup was investigated awhile later. It was about 3" in diameter + 1½" deep. The vegetation was not just matted down or pushed aside but apparently had been picked out & I guess carried away from the site. The bottom of the nest was mostly dark blood-colored moist soil with some broken root-ends present. There was no loose material either on the bottom or around the sides. It was located on a small hummock - 3' in diameter - near a polygon trough - with 6" of water in it. - It was marked & will be checked again.

Dunlin feeding along Elson Bluffs would move slowly - picking frequently at the surface of the ground (in well vegetated areas) or probe very shallowly. Deep probing of any kind was not observed

feeding

Holmes, R.
1962

Erolia alpina

7 June Barrow, Alaska
Displaying birds seen &/or heard near Voth's + Britton's Areas and along Elson lagoon. The aereal call may be ka-rah, ka-rah, ... or may be abbreviated as k-rah, k-rah, ... (The Sanderling in opposition to this has a kmm, kmm . . . .).

A flock of 4 was seen E of Voth's Area + a group of 6 near Britton's Area. 6 were seen along Elson lagoon.

flock

8 June Generally - a very little amount of chasing was found today - along Elson lagoon - but aerial displaying seemed to be going on as usual - perhaps the chasing activity is subsiding in this area. I must check newly opening areas.

In the evening, several Dunlin were watched in the vicinity of Voth → gasline - in bluffs above the backwash from the lagoon + Voth creek. One displaying bird flew in - fed - sat into nest cavity - with tail + pointed (folded) wings held high in the air so that the white undertail coverts + lower abdomen were very conspicuous - the bird appeared to press its breast into the cup - + in doing so the abdomen + appendages were moved from side to side in a waggling

nest cup shaping

Holmes, R.
1962

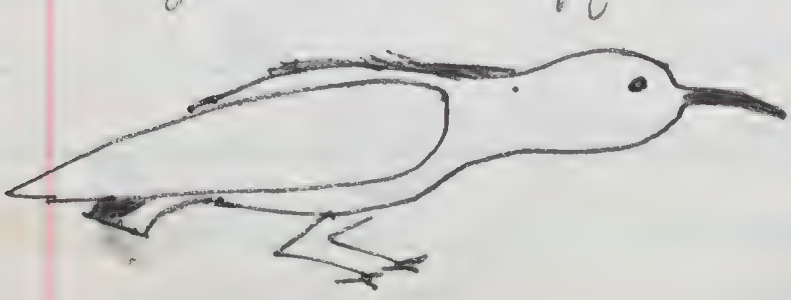
Erolia alpina

8 June Barrow, Alaska

motion. Several times while in this position, he picked grass from the edge of the nest - throwing it off to the side - as if over its shoulder. Then stood up - did several more grass throws - then flew up did a complete aerial display - klawing - & trill. Then landed about 200' fr. the N. + began feeding. The ♀ had been feeding about 50' to the south in another patch of open tundra. This all took place on patchy - snow covered tundra. The nest cup was 4" in diameter - 1½" deep. with very little loose material in it - but with only bare roots + soil in the bottom + sides. Apparently - it had just been found & was not well developed.

An aggressive action - was seen between this nest - (#1) ♂ + another (#2) displaying bird nearby. Both birds were on the ground - both having landed on V-wings giving trills. #1 - hunched over - with tail depressed - + partially fanned - back feathers slightly ruffled - while #2 was almost in the same posture - but had head held a little higher + tail in normal position. In this position #1

28



Holmes, R.
1962

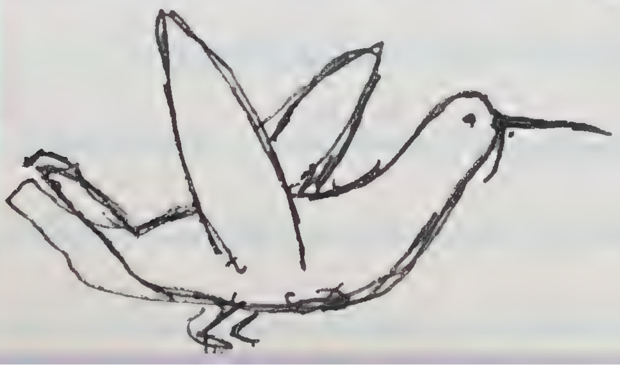
Erolia alpina

8 June Barrow, Alaska
ran at + displaced #2 - & the two birds were "leap-frogging" over the tundra on the ground + in the air. - tumbling was seen frequently where 1 ♂ would jump in the air + be followed by another - the both would fall together with wings flapping. This went on for about 10 minutes - before the two separated - one #1 jump off + display aerially, - the other beginning to feed.

9 June Displaying birds seen + heard on nearly open areas (ground from Britton - to work to Village Slough + Ikroavik + Footprint Lake. Very little chasing was noted (only 2 cases - both on Ikroavik census plot).

One bird in Britton's area gave a good distraction display with head over back feathers ruffled, tail depressed + spread + went shuffling over the tundra. - no sign of it was seen when this area was checked later.

10 June Courtship seen - terminated in copulation. ♂ with wings held at 45°, tail slightly elevated - head held half high - running after ♀ - both took flight + land 100' away - the ♂ jumped onto ♀ - copulation - fluttering off. ♂ gave Comical trill



9d Courtship

Holmes, R.
1962

Erolia alpina

10 June Barrow, Alaska
as they flew - both flying together - but the ♂
in pursuit - flying erratically.
Birds seen everywhere today - but
the amount of aerial displaying was
very poor - only occasional birds were
heard - why is it that when the weather
is good - displaying is at a minimum &
vice versa? (In the evening, when
the fog set in - more displays were heard
along barrel ridge).
The dunlin may give a zhripp, zhripp,
a quiet loud grating call note when
it is disturbed.

11 June Displays heard commonly in area between
Voth & Footprint Lake - also on insect plots,
barrel ridge & Elson Lagoon-Bluff

12 June One ♂ being chased by a Curlew Sdp. - see sp. acc.

13 June Bird giving a mouse-run in Britton's Area -
with hunched back, tail lowered & spread.
Also one individual with primary 1 dropped.

14 June Occasional birds seen between Beach Ridge -
Ookpik Slough & Ikroavik - but numbers were
not conspicious.
RB conflict noted west of gasline on Beach
Ridge. One ♂ displayed - with full
churring - then trill. Immediately another
bird got up - gave the trill & then

Holmes, R.
1962

Erolia alpina

14 June Barrow, Alaska

resettled - seemed like counter-singing - both birds were not displaying at the same moment - nor were they in close proximity - at least 200 yards away. Later - 2 birds were chasing by their erratic flight - passed through two territories: each ♂ getting up to chase - (with set V wings & trill & then turning back & giving the churring - trill before landing. Finally the chased bird landed - apparently in his territory - & remained in the alert position - giving a harsh, grating breeep, breeep, ... & acting very excited. This was given continuously for 2 min - then a trill - then more of the same. The bird flew up displayed 1st at 10' - then with rapid wing beats - moved up to ~ 60' - hovered on down-curved wings which were quivered rapidly - then held still - then quivered again - etc. - giving the kraa, kraa. After 3 min. the trill was given as the bird set its wings & spiraled down to the ground - where he held his wings vertically for 2 sec. before lowering them into normal position. The trill is not usually ended until the bird is standing & folding wings

Holmes, R.
1962

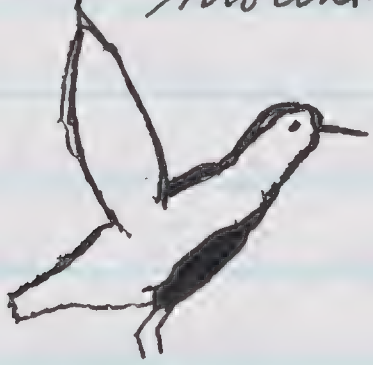
Erolia alpina

14 June **Barrow, Alaska**

One bird nearly in display. gave a long drawn out trill which modulated in pitch & lasted for at least 30 sec. - The next was a very semi-pl-like note

Yesterday - a bird was seen with set V wings. giving the trill - gliding swiftly & landing - with both wings up. It walked several feet with these wings up, then lowered them, ran 10' across a trough to the ♀ feeding behind her. raised both wings to 60° - tail in normal position then [?] up - & mounted her - copulation ensued with a wild beating of wings by the ♂ - probably for balance & then he jumped off - took the air - to give a display flight.

(margin: on ground display — copulation)



One of [illegible] 10 bird seen showed worn primaries.

15 June Nest found atop the Beach Ridge - W. 1 Mi 4 barrels [?] - with 4 eggs - the ♂ who was incubating gave a relatively strong distraction display - with tail depressed & spread - body feathers ruffled - wings were in molt

(margin: Nest)

Holmes, R.
1962

Erolia alpina

17 June Barrow, Alaska

Very little activity along the beach ridge & Elson Lagoon. One bird was seen doing a nest cup display where the tail & pointed wings were sticking up into the air & the bird was moving them from side to side. This was performed in two cups [both with bare bottoms i.e. no grass) & the sides were only scantily lined. Nest #1 (on B.R.) - was being incubated by the ♂ - ♀ was not to be seen.

Nest cup display

Only one or two birds heard along Elson Lagoon & Wohlschlag Slough during the entire calm afternoon.

In the evening, Stevens & I located 4 nests (#3 → 6) in the area in & east of Voth Area.

Nests

#3 was located on a grassy - hummock - near several - black - topped [grassy] high polygons. It was surrounded by tall grass & sedge - covering it from view - located 8" back from edge of polygon. 4 eggs.

#4 on grassy - sedge covered slope - directly so. of the missile site - again in tall grass - so. exposure. 4 eggs

#5 - on same slope as #4 - but 150 yards further to the E. - again 4 eggs - in nest covered by grasses & sedges.

#6 - in the bluff - farm E - with 4 eggs - low polygon - with 4 eggs. - covered with grass & sedge.

Holmes, R.
1962

Erolia alpina

18 June Barrow, Alaska
aerial display - heard from 1 individual along the Beach Ridge - west of gasline. Flutters or quivering wings for 3 sec - glide on outstretched, down-curved wings for 6-10 sec - then flutter again. All the while the bird was uttering the churring - kraa, k-raa, k-raa, ... Once - wings were set at wide V - trill was given - which dropped in pitch - bird lost some altitude - but regained it when quivering - gliding flight was resumed. This was all taking place at 75 to 100'. Finally - wings set at 45° < V & the bird spiralled down - giving a loud, drawn-out - trill which dropped in pitch. The bird landed with both wings held vertically - then folding them slowly & in a deliberate manner.

Wings still held at vertical upon landing - even though 1 to several primaries are missing.

aerial display

wing-up

20 June Ikroavik - 2 nests found - 1 - 200' WNW of wannigan & 1 700' - E of wannigan - both with 4 eggs - in tall (2-3") grass on large grassy polygons. Several other birds displaying on the north plot - see census notes. Wings are still being held aloft for ½ to 1 sec - upon landing.

21 June A nest was located on the plot - with 4 eggs - the ~~egg~~ incubating bird gave a

Holmes, R.
1962

Erolia alpina

21 June Barrow, Alaska

strong distraction display - mostly of the mouse-run variety - with head lowered & pulled in - back feathers, including scapulars, ruffled, tail lowered & spread & the bird shuttling off over the tundra - after running 30' - it stopped, turned toward the nest & looked - then ran off again. lost out the ruffled appearance - but still in mouse-run posture. Upon leaving the nest site, she began the fluttering twice with wings flapped out to the side & went scuttling off over the tundra - (through a trough).

distr. display

The alarm or disturbance note given by the Dunlin is a trilled, note - ~~ret, ret~~, ret, ree, ree ... which may be given in several pitches. - varying somewhat with the excitement of the bird.

23 June Nest #12 - with 4 eggs - E1 mag. stat.

24 June Two nests found on & near the Ikroavik plot - both with 4 eggs. ♂♂ were incubating & gave strong distraction displays when I approached the nest [1 at so. end of plot - left nest when I was 100' away - but gave a slight mouse-run-late when flushed from the nest - gave the wing flapping to both sides - tail depressed - fanned head forward & low - flapping flight - bumping over the tundra - giving a varied squeaking noise. It would stop - in hunched - mouse - run posture -

distr. displ.

Holmes, R.
1962

Erolia alpina

24 June Barrow, Alaska

with wings folded but tail lowered + spread + look around toward me — then turn + go skittering off in a direction away from the nest. On the other nest (near 5.2) - the bird did not flush until I was 5' away - then stood up + fluttered off - as described above. At times when the bird is away from the nest + thinks you are following she will run in the rodent posture + flick both wings to the side - showing the white wing-stripe - making be quite eye-catching. In this last nest, the ♀ was nearby - giving the ri-ri-ri - + then a short trill - while all the while, the ♂ was giving the distraction display.]

At the nest near 5.4 + the one E of the wannigan the birds (♂♂) remained on the nest until I was within 8' - they then fluttering off with the wings spread - bumping flight - giving the squeaking note. All nests had 4 eggs - all had ♂♂ incubating - only one had both birds present during my visit + the nest.

Display activity was practically nil today - only when a bird was disturbed - did it call or trill - 10 - 15 mph - NE wind.

Holmes, R.
1962

Erolia alpina

24 June Barrow, Alaska
The nest at the south end of the plot - was accidentally stepped on. When I returned 3 hours later - one egg shell had been moved 3" away from the cup, 1 was still in cup & the other 2 were wet & broken. Had the incubating ♂ removed the two as apparently is done at hatching or had a predator taken over. North Pac. RD was seen at this time & the second visit.

26 June Very few display heard yesterday or today - but weather was clear & there was little activity generally. The nest in the B. R. - near the 4 barrels was checked yesterday, the eggs & the adults were gone.

27 June Ikroavik - very little display activity on the census plot - the nests were all present & being incubated - in each case by the ♂ (as far as I could tell). In all cases today - the birds left the nest before I was within 60' - the bird flying directly from the cup - landing between 40 & 100' away - going into a slight crouch - run - then straightening up on a mound - giving an excited ri-ri-ri - then running with head forward to another mound - standing erect - calling again. If I would follow him - he would run off through the troughs in a mouse run - all the while looking back over the shoulder.

Holmes, R.
1962

Erolia alpina

27 June Barrow, Alaska

after it was 100' or more from the nest site, the bird flew a short distance giving a partial whinny (trill) - landing - running off in a more normal posture - which he kept up for about three ack-lengths before flying around & heading back in the vicinity of the nest.

Another bird when flushed from the nest near 5.4 - flies across the nearby pond - in a distraction flight - head forward tail spread & down shallow wing beat appearing as if the bird was fluttering across the ground - but this time - it was in the air - 3-4' over the pond.

In the evening, 1 display was heard in the distance - during the evening a [illegible] ridge.

28 June Only 3 displays (incl. - 3 with trees only - no knee) heard during my 2 hour walk from Britton to Voth Area. No counter-singing was going on; perhaps even these displays were evoked by me - in approaching a nest.

Nests #3 & 5 were still present; no bird was incubating but eggs were warm. #4 & 6 were gone & there was no sign of adults in the vicinity.

Holmes, R.
1962

Erolia alpina

28 June Barrow, Alaska

The displacement or disturbance note – given when the bird is flushed from the nest or from feeding is a trilly + buzzy – bzeet or zheet. Also given by a distraction-displaying bird once she (or he) is faraway from nest. Nest #2 near T III A is still present; both birds were in the vicinity.

29 June A total of 3 birds seen between Wohlschlag & Oolepik Slough. No displays were heard.

30 June Warm, clear day with lots of mosquitoes – but no displays were heard. Three birds were seen on the circuit from B.R – gasline R., Wohlschlag Slough – to No. B.R. 2 Camp.

Nest #3 – incubation by ♂ – who jumped off the nest – flew low to No. – landing 200' away – never returned while I was near the nest (2 min).

Nest #5 – ♂ flew off the nest when I was 50' away – flew low over the ground – setting wings in V + trilling. Finally it landed (– wings folded quickly with the body – not held up) – trilled again, ran a few feet with head forward – but not in full, rodent run posture – stopped gave trill again + then flew off gave 1 more trill landed 15' away. When I moved to the nest, it came in close + gave a fluttery flight with wings out to the side – fluttering over the tundra – the same rodent run – then low

Holmes, R.
1962

Erolia alpina

30 June Barrow, Alaska
Flight - with trill. The eggs (?) in the nest were pipping.

1 July - Nest #2 with 4 eggs - no piping - ♂ left nest when I was 60' away - trilled & landed 30' away - never came closer.

Nest #5 - ♂ flew off when I was 60' away - trilled once & landed. - 1 young 1½' out of cup. 2 in cup & 1 egg - no piping as of yet. (1330). The ♂ stood away - giving an occasional rah, rah, rah - or: BzEEET alarm or disturbance note.

No other birds & displays seen or heard today.

~~2 July~~ 1900 - Nest #5 - 3 young & 1 egg just beginning to hatch [i.e. pipped]. ♂ flew off - gave trill - landed - continued with the rah, rah, rah, ... - see p. 37

2 July All nests - plot & near wannigan were active & were being incubated. Four more pairs were localized - the plot - but nests were not yet located. - see census sheets.

Distraction displays

Nest #9: when 10' away - the bird flew up & off - 1-2' off the ground - (landed 100' to NW:) - gave trill just before landing. Stood there & gave several rah-rah - sequence & then flew off giving trill - several times. This exact sequence happened earlier when I went by with a weasel.

Holmes, R.
1962

Erolia alpina

2 July Barrow, Alaska

Nest #10. Bird left nest while I was 100' away flew to south, uttering several trills (3) - not seen during next two minutes.

Nest # 8. - Bird flew off when I was 50' away - flying low to E - landed at 70' - no trill given - bird not heard until I moved away when it gave the BzEEEP - alarm note.

Nest #7. Fluttered off - with wings flapping & loud squealing call given - when I was 6' away. Fluttered off - half-flying, half-running - looking back over the shoulder. - Then taking flight across the pond - still maintaining a partial distraction posture with tail depressed & partly spread. Landed on other side in robust run posture - ran to mound & stood upright - gave rah-rah-rah - then ran off & rode run through rough - followed me for 100' - giving rah-rah-rah as I moved north.

There seem to be two primary alarm notes - each which may be given at different pitches 1) rah-rah-rah-... - aggressive or offensive note given when the bird is sufficiently far from the nest & stands up to show itself. Sometimes

Holmes, R.
1962

Erolia alpina

2 July Barrow, Alaska

This is given to me & stand close to the nest for more than 2-3 minutes & the bird gains enough "nerve" to approach closer - i.e. when he is getting more aggressive & more excited. — both sexes - gives a sound usually

call note

2) BZEEP a defensive alarm or disturbance note given by both sexes when alarmed - or inbetween stormy distraction display. May stand off at a distance (30 ft) giving the note - i.e. annoyance

aerial display

AERIAL DISPLAYING - 5 hours on census plot - 18 trills heard - representing 5 birds - Some of these were given in response to my disturbing the bird from the nest. 4 times however these were heard in the distance - where only one trill was given with no introductory kroas. & foot kroa-ing was only heard twice - both by birds flying 10' off the ground. (1 near 10.0 - one near 22.2). The drop-off in this churring is quite noticeable. Twice - the trill was preceded by 3-5 introductory notes. which may have been higher pitch modification of the kroa.

calls

It seems that alpina has a greater variety of calls & more varied pitch than any other calidrine. That is - the lower pitched

Holmes, R.
1962

Erolia alpina

2 July *Barrow, Alaska*
churring can be almost as low + grating as *alba* + other at times - it may be high-pitched like *bairdi*. A certain amount of this variation is found in each individual - but is more extreme + therefore more noticeable between indiv.

1 July - continued. At nest # 5 when I returned at 1900 - two young + 1 pipping egg were in the nest cup - 1 young had moved off. At this time - there was no evidence of the egg-shell fragments which must be removed within hours after hatching.

3 July A ♀ was collected on the Beach Ridge - near the Black Box (due So. of AACS) - with 3 collapsed follicle + 1 ova ab 7mm - apparently having one more egg to lay.

A family group of 2 Adults (♂ + ♀) + at least 2 two-day old young were noted No. of UPB's Area. The ♂ + 1 chick were collected. The ♀ continued to give the rat-rat-rat + an occasional B z EEEP - as she flew excitedly from 1 place to another - then as we drove off in the weasel she followed for two - to three hundred yards.

Holmes, R.
1962

Erolia alpina

4 July Barrow, Alaska

Nest #2 checked - a bird flew off when I was 40' away, flew low over the tundra, landing 25' away - giving the nasal-trilled alarm note rat, rat, rat - which can be given - several pitches - sometimes as high as to sound like yek, yek, yaak. - these usually came in 3's but occasionally sequences up to 6 & 7 were heard.

Suddenly a group of 8 birds were present - these may have been a flock or neighbor pairs & some lost track of the pair at the nest - since they were surrounded by these birds. One ♀ - suddenly began to give a distraction display - with wings spread out ~~to~~ to the side & moving away from me - slowly. A ♂ next to her - trilled - lifted head & both wings - tail in about normal position - trilled again & walked behind this displaying bird. Suddenly another ♂ nearby raised one wing (next to it - most) toward this other displaying individual - but its tail was partially lowered & perhaps slightly spread - the head was held low - he also trilled & moved toward the apparent courting bird ...

Holmes, R.
1962

Erolia alpina

4 July Barrow, Alaska

the latter flew off. Perhaps this flock of birds consisted of non-breeders which were sufficiently motivated to perform courtship antics - this is possible - since some birds are still laying eggs.

The pair at the nest finally began to move slowly & cautiously toward the nest site - while the others moved on - feeding. However every so often one would run up on top of a mound & give a trill. More trills were noted this morning in this area - than anywhere in the last week (20-25 trills - in 15 minutes). One high display heard - when a high circling bird (not a quavering wren) gave several long drawn out trills. - No kwarring was heard.

Nest contained 2 eggs. apparently two young were in the vicinity.

R.B. #3 - ♂ flew off nest when I was 100' away - landed 50' away - giving rah, rah, rah calls after landing, intermixed with a B₂EEP. Two young were found within 1' of nest - other were probably nearby. Must have hatched within last 24 hours

Holmes, R.
1962

Erolia alpina

5 July Barrow, Alaska

Nests all intact on Ithroavik plot & vicinity. Four more were located on the south sector - each with 4 eggs - each with ♂♂ incubating. No sign of hatching yet.

Nest # 7 - ♂ allowed approach to 10' - then fluttered off at Rt Ls - in injury flight - flying across the pond - landing in a mousesun - then standing up on top of a polygon top & ral-rahing several times. He followed us for 350' before starting to work its way back toward the nest

Nest #8 - birds were off nest & moved into a flock of 4 - unsettled birds.

Nest #9 - bird (♂) flew off when I was 6' away - flew low over the ground in a rapid flight - landed 60' away [at Rt Ls to me] - ran in a hunched posture - gave several ral-rah!, - then disappear

Nest #10 - bird (♂) again flew off in a low rapid flight - lasting 20' from nest - landed 100' away - ran off in hunched posture - then stood erect - then disappeared in a trough - not seen again until I turned & headed away - then it led me off - while it was in a partly hunched posture

Holmes, R.
1962

Erolia alpina

5 July **Barrow, Alaska**

Nest #14 - at south end of plot on top of low flat polygon - hidden by sedge-grass blades. - ♀ incubating - flew off the nest when I was 20' away - flying low & rapidly - landing 50' away - stood erect giving 3 sequence of rat-rat-rah - then running off hunched over, - looking back over its shoulder, stopping - standing erect - then running off again.

Nest #15 - allowed approach to 40' - flew 50' at RtL - landed - & ran off in a rodent run - often looking back - finally when 100' away - moved in a partly hunched posture - circling around & following me at the side for 200' or more. Then flying off - giving trill.

Trill activity was generally up today. Three instances of krao-ing voice recorded - one of these was by a ♂ with a very weak voice - giving a high pitched ~~krao~~ ka-räh -. This could be either a young bird - or the feeble end of a display period - call.

Krao

26 Trills heard during the 6 hours on the plot - most of these were in response to my disturbing the nest - the remainder were in response to other birds & probably represented the remainder or termination end of territorial activity.

Trill

Flock

Flock of 4 & one of 3 on Ikroavik plot - apparently

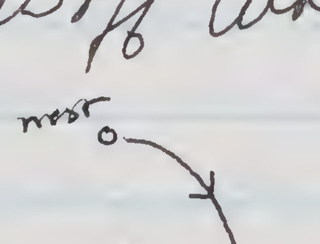
Holmes, R.
1962

Erolia alpina

5 July Barrow, Alaska
unsettled & moving through the area. The only call made was the Beep. Sex could not be determined on these individuals — all appeared to be the [illegible] same.

FEEDING BEHAVIOR: During the month of June - it seemed that the Dunlin kept to the higher, well-drained ground - usually in area of low polygons &/or grassy slopes. This is borne out by stomach content work - since Tipula larvae seem to be a major food item & these are apparently most common in these particular sites. Also - these areas are the 1st to be exposed in the spring, & dry out some, & perma-frost sinks faster. By 20 June - the pond areas are opening up & the upper inches of the sod are thawed - the birds seem to move into these areas & feed either along the pond edge or on the ridges that separate the ponds. This seems to hold through the present time.

6 July Nest #17 - intact with 4 eggs - ♂ incubating — flew off when I was 100' away - flew toward me & finally landed behind & to the right - The flight was direct & with fluttering beat.



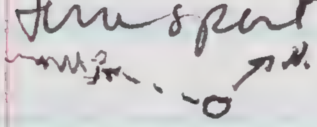
After landing, the bird went into a rodent run posture - 1st facing me then turning & running away - all the while looking

Holmes, R.
1962

Erolia alpina

6 July Barrow, Alaska
back to see if it was being followed. As I continued walking toward the nest - the bird disappeared in this distraction posture & was not seen or heard during the next 3 minutes that I was in the area.

Nest #16. New nest located so. of B.R. - near nest of Curlew Sandpiper - contained 4 eggs & ♀ was incubating. - Flew off nest when I was 100' away - gave 3 short versions of the trill + 2 breeps & landed in a hunched posture, & given a mouse-run display for a short distance - then disappeared off into outcrop - not to be seen for the remainder of the time spent in the immediate vicinity (2-3 min)



wing up

Wing-up display upon landing is a much reduced part of display now. Only once was it noted yesterday - & then the bird after doing an aerial display kept the wings up for only ¼ sec before lowering them.

7 July Flock of 4 found No. of B.R - NE of magnetic station - watched feed - no animosity between them. Two were collected & one had a band - 56 137839 ; which was a bird

flock

Holmes, R.
1962

Erolia alpina

7 July Barrow, Alaska
I banded last year - 7-13-61 as a chick - in the locality north of Vot Area. The bird had well developed brood patches + either was breeding or has failed.

FEEDING BEHAVIOR. - The predominant feeding action was pecking at the ground surface +/or vegetation - but occasional probes into the grassy sod were made - see field record sheets. - more detail in FOOD section.

During 2 hours of observation plot in Vot Area - only 2 Dunlin trills were heard.

8 July Several individuals seen along the grassy slopes on the N. shore of Wohlschlag Slough. The one nest (# 16) was still there - with 4 eggs + ♂ incubating. No distraction display was given. The ♂ on nest #12 also did no distraction display - only several bdeeps - or bzeeps. - again 4 eggs were present.

9 July Ikroavik ** The two nests near the wannigan were gone - no sign of adults or young. [These were #9+10 - found on Jun 20th - with 4 eggs - so hatch expected at least by 10-11 July -]

Nests #7+8 on the plot were also empty - again no sign of adults or clutch - these probably hatched + have moved off.

Nests #14+15 were still present + were being incubated. At #15 - the ♀ did not →

Holmes, R.
1962

Erolia alpina

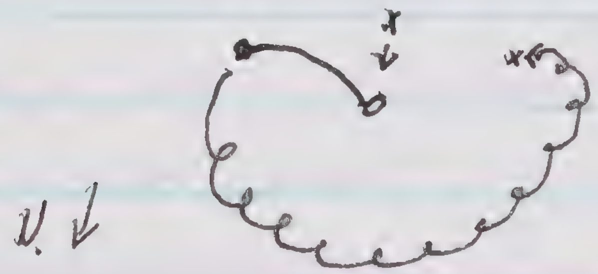
9 July

Barrow, Alaska

leave the nest until I was 3' away & then fluttered off in a low-bounce injury flight stopping at 20' - going into a rodent-run posture - running off - giving a loud irregular squeaking call. She did not return to the nest while I was present, but after

she was 60' away - she began to displacement feed:-

At nest #14 - the ♂ left the nest when I was 20' away. flew off - landed 40' to E - gave several rat-rat's - then flew off & gave 3 dives - the air while in decanted wings



Brood

Two adults & 4 young were found near 12.3 - where a bird giving a strong distraction display was observed 4 days ago. The young were banded. The ♂ here - gave a very strong distraction display - with wings out, tail depressed & spread & then flopping off over the tundra. When this did not deter us - he would run back in - in a rodent run posture & then turn & go

Holmes, R.
1962

Erolia alpina

9 July Barrow, Alaska
flopping off again. The ♀ stood by & gave the rab-rab-rab call many times. She never gave distraction display & when we walked off - she ran & flew short distance - while the ♂ gave a strong display.

No other birds were seen on the plot. Occasional individuals were seen in the region around the lake - but no more young could be found.

Two displays were heard during the 4 hours on the plot (trills - with one short sequence of kraa's). Several trills were heard last evening & early this a.m. [2300 - 0200] - from the wanigan.

10 July Two broods encountered near VHF - Insect Area. One - with ♂ attending - had 2 young - both banded - on 1 July at nest #5 & now were 700 yards east of Insect Area - meaning they had moved more than 1/4 mile during these 10 days - also apparently 2 have been lost.

The other brood consisted of the ♀ (#1672) with 2 young - 600 yards NE of insect area - all were collected.

~~[illegible]~~ One flock of 4 birds seen SE of insect plots - feeding in the marsh (but - polygon ridges - not pond edges).

Holmes, R.
1962

Erolia alpina

10 July Barrow, Alaska

Nest located on south slope of insect ridge - 60' NNE of barrel - a flat grassy slope - 4 eggs - ♂ incubating - gave no distraction display - instead flew off to 60' [I was 40'] - gave 2 trills + several sequences of rub-rub - + then moved off feeding.

11 July Nest #12 - still intact yesterday - no bird was seen. Nest #16 - being incubated by ♂ - left nest when I was 30' away - flew off 30' - gave trill + rub, rub.

No family groups encountered - only birds seen were in Vah Area - Insect Ridge - where 3 were found feeding in the dried-out low-c. polyg. area - feeding obs. were taken.

12 July 1 display heard during the 2 hours on the plot + this consisted only of 1 brief trill. The only other Dunlin seen were the birds on nest [2].

#14 - ♂ left nest when I was 8' away - flying 1-2' off the ground - in shallow wing-beats (i.e. like aerial display flight) - flew 400+ feet before landing. Gave 3 b-reep in flight - did not return during the next five minutes. - still 4 eggs

#15 - incubating bird flew from nest when I was 4' away - gave an upper flight for 100' → into a mouse run for 10'

Holmes, R.
1962

Erolia alpina

12 July Barrow, Alaska

and she took flight making a wide circle around the nest - landing about 200' away. No calls given except the squeal during the injury flight. While in flight - a Long-t. Jaeger made a slight stoop toward the bird - at which time it dropped a foot or two in altitude + increased speed. The LTJ flew on.

In the afternoon - a group of 4-5 birds seen N. of the Area - feeding among the polygon pools + grassy interspaces. 2 or 3 other birds also seen - but scattered through the area. 4 birds were collected - at least 2 from the flock + all were ♀ with well-dev. br. patches - some of them were starting to be refeathered [with pin-f]. Were these flocked ♀ from "deserted" nest or had they left the ♂ in charge of young?.

Only 1 trill heard during the afternoon.

One other brood was encountered in the marshy, polygonized ground 100' No. of Footprint Lake - 3 young + ♂. ♂ gave a mouse run - turned + gave a fluttering injury flight - + then a mouse run again - kept coming back in + running out again - gave shriek - or squeaky calls - "schreee" w. squeal. Stood off giving rali's or breep. - then would run in open + repeat distr. display.

Nest ♀♀ (margin)

brood (margin)

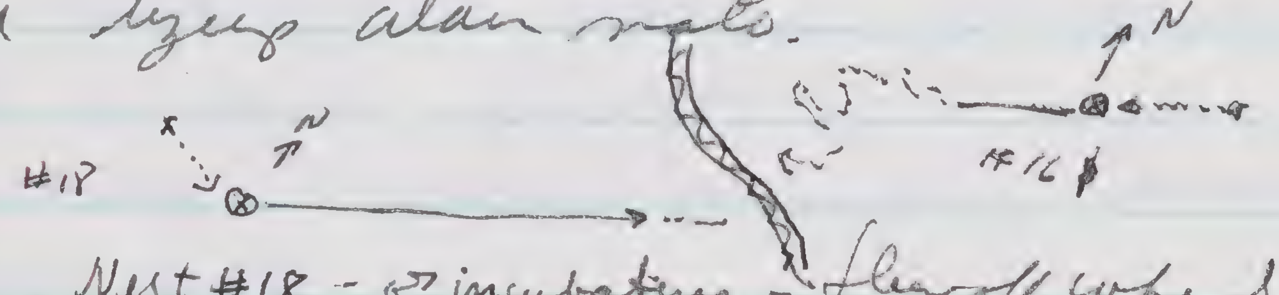
Holmes, R.
1962

Erolia alpina

14 July Barrow, Alaska

Nest #12 was empty - a bird nearby was heard giving an alarm note -bzeeg- so the brood may have been off in the distance. Ten were seen near E15n - 1 collected - no sign of young

The ♂ was incubating at nest #16. It flew off when I was 20' away - flew low to the ground (1-2') in a strong flight, landed 40' away in an area of high polygon - went running off through the polygon trough in a hunched position. After checking the 4 eggs - I walked toward the area & found the bird sneaking off through the troughs - showing no tendency to return. It gave the dzeeg alarm note.



Nest #18 - ♂ incubating - flew off when I was 25' away - gave two trills as it flew low over the ground - landing 300'+ away & beginning to feed. As it landed - it gave a partial wing flight - ie tail was spread & it fluttered low to the ground - but no more display was observed.

flock A flock of 9 - apparently individuals seen ♂♂ was seen No 1 Voth area in the lowlands. Most of these were feeding

Holmes, R.
1962

Erolia alpina

14 July Barrow, Alaska
along the pond edge and in the block mud. Three of these were collected [#1637 - 39]. No family groups were noted anywhere in the field today.

16 July No displays heard on the plot today. Only 1 nest was still present. The ♂ left the nest when I was 10' away - by standing up - flying 4' settling with wings in air - gave part of trill - then flew off low over the ground, landed 10' away - gave a short wing flight when the squealing could be heard & then stood upright - giving 2 series of rai, rai, rai + several alarm notes.

A flock of 12 were seen 100' east of the wannigan - feeding in the slope & among the pond ["lowlands"]. No other seen today.

flocks

17 July Flock of 8 found on beach ridge - So. of AACS 4 collected - see catalog. No young found today. Another flock of 20+ was located by J.O. Sullivan near Void Area. These flocks must be birds that have failed to bring off successful broods since the earliest hatching was just over two weeks ago. Or these could be 1 of the 2 parents which are taking off?

flocks

Holmes, R.
1962

Erolia alpina

18 July Barrow, Alaska
Pair + 1 young seen north of the Bruce Ridge on the road toward Central Marsh. The chick was about a week old. The only other encountered was 1 at South end of B.R. — at nest #16 — where eggs were still present.

19 July - Flocks present in the No. Us.Th. Area — varying in number from 3 — 16. Probably a total of 50-60 birds in all — no young seen. All those seen were feeding in or near the ponds in shallow water or black mud.

Nest # 18 near Insect Area still with 4 eggs. The incubating bird was off the nest when I got to the nest — but was standing nearby — giving the vol-vol-vol — no distraction display

During the 3 hours spent in the insect area — the aerial trill was heard once, but was given in a feeble way. The RB seems to be the only species which uses its trill as an aggressive note beyond the period of territorial defense. It is often given when the bird is startled or disturbed — with no other preliminary notes. The trill at this time of the season, however, is weaker + more variable in pitch than in the loud, resonating trill during

aerial trill

Holmes, R.
1962

Erolia alpina

19 July Barrow, Alaska
early June. The calls are rarely given in display flight after 1 July + instead are uttered in a regular flight - short excited flight, ie when disturbed from the nest + on the ground.

20 July Flock of 13 on slope No. of Ikroavik wannigan: feeding at pond edge + ridges in between. None seen on the flat - but the bird on Nest #14 was still incubating - 4 intact eggs. As I approached, the ♂ stood up - flew 6' off landed - gave trill - then flew off in a low direct flight - landed 40' away - went a brief injury display + then did a mouse run off through the grass [troughs] - not to be seen in the vicinity for the remainder of the time I spent there (several minutes).

Nest #2 near T-3A - No. Unit was rechecked + the two unhatched eggs were still there. When cracked - they proved to be infertile - just a mass of yolk + other material - no sign of an embryo.

STERILE EGGS

Several groups of RB seen in No. Unit Area - mostly feeding on the pond edge + on the ridges in between. No young were seen but several were caught in the traplines (see catalog).

Holmes, R,
1962

Erolia alpenia

21 July Barrow, Alaska

Nest #18 which was present, being incubated + not pipping on 19 July - 1300. - was gone today at 1330. Hatching must have occurred yesterday - 20 July. - No birds were seen in the vicinity.

Only 3-4 adults noted in the No. Oil Area - on a block-mound pond. No others were seen between there - Wobbler Slough + beach ridge - except 1 with a flock of Gold Plovers - on the south side of the beach ridge.

22 July Flock of 8 on the marsh area + ridge slope north of the Ikroavik Wannigan. This is the only group seen today beside 2 Ads with 1 chick in the north sect. of Footprint lake (50 yards from north shore) - The chick was collected. Only one parent did the injury run with tail + wings out + /or down - the other bird - the ♀ - stood + acted excited - gave the breezy call + over-tone rel, rel, rel - sequences.

♂ did dist displ (+ not ♀)

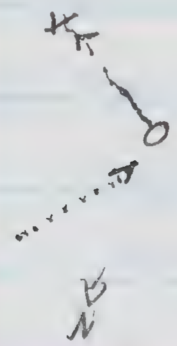
The squeal given by the distracting bird was a high pitched - bee-hee - given over + over again - as it fluttered off through the grass on the lake bed.

The nest (#14) at the south end of the plot was checked. The ♂ jumped off when

Holmes, R.
1962

Erolia alpina

22 July Barrow, Alaska
I was 25' away - gave two alarm notes (bzeeps) + landed - 30' off to the side



The flight used when leaving the nest was a shallow rapid wing beat similar to that used in aerial display - the bird never went more than 3' off the ground. It stood at this distance while I examined the nest - continued the alarm note + occasional a three-parted ral-ral-ral. It flew again - about 100' circling me at the nest - landed + gave three trills - burdeeeeee each resembles the trills given during the territorial display but weaker. The nest contained the 4 eggs - all of which showed signs of pipping. - One probably would be out tonight - and the other three by tomorrow morning.

hatching

23 July Large flock of both ♂♂ + ♀♀ on the tundra near Ponds K + M [No. Vote]. The group was flushed + they all landed together [18+] - then scattered out as they began to feed. Body molt was not obvious. The gaps in the wings seems to be about closed but some of the secondary coverts seem to be missing yet.

Holmes, R.
1962

Erolia alpina

24 July Barrow, Alaska
Scouted No. Volk. No. insect plot + Volk slough - Only Dunlin found were near the insect ponds (G.H., I, J) + here there was only a group of 6. Some feeding records were taken - + 1 bird was collected. No young were found.
Feeding seems to be mostly in the black mud ponds or in the surrounding 2020 ridges + grassy swales. One bird was found with a group of plover on the north slope of the insect ridge - but no other could be found on upland localities. Most of the feeding is now by jabs - while probing + jabs predominate in the mud.

25 July Found 1 ♀ north of magnetic station - but she was acting as if she had young - c̄ bzeep + occasional trill call (bdeeee) - but they were not found. Later 1 ad was found feeding in a black-mud pond - where the feeding action was to shove the bill 5-10mm into the mud - then root along for 4-5 inches - apparently trying to come across any larvae. While the bill was being shoved through the mud - the head + i.e. the bill was jerked back + forth - making for a sifting motion - the bird had several chironomid larvae in its stomach.

Holmes, R.
1962

Erolia alpina

25 July Barrow, Alaska
Four of the individuals were encountered feeding with a group of 8 Golden Plover on the slope - east of B. Ridge. - they were collected.

26 July One flock of 6 encountered east of lower insect ponds (F-J). They were all adults - showing no evident sign of body molt - all were feeding in a loose group - with 15' of each other. When flushed - they flew together & landed nearby. Once when two were feeding in a black-mud pond - they suddenly ran for the edge of the pond & crouched in the tall grass. Several seconds later a Long-t. Jaeger came cruising over & moved on to the south. After about 30 sec - the birds moved out & resumed feeding. Most feeding was done on the black mud - in water - where was "belly deep" - where the bill probed to the mud surface - but usually not far into the mud (from what I could observe). Several times the complete head was submerged! however & these instances were probably deep probes. Feeding records were taken from some of these birds

Holmes, R. 1962

Erolia alpina

27 July **Barrow, Alaska**

None seen near Insect Plots - but day was cold, wet + very windy - resulting in very little bird activity.

28 July Flock of 40± found feeding on Elson Bluffs - half way between Wohlschlag & Ookpik Sloughs. Sex ratio seemed about equal. The two birds collected - 1♂, 1♀ - both lost incubation patch + both were moulting - in all areas.

The feeding method of these birds was predominately a jab + this correlates with their stomach content - in that *Tipula* larvae were the most frequent item.

Only 1 other bird was found in the swamp to Elson lagoon + Ookpik - this was giving a distraction display - from what I expect were young - but they were not located.

30 July Flock of 6 found on well-drained "slope" habitat ± 400 yards east of the beach ridge - 1 of them was a flying immature which was doing its feeding entirely by pecking at the surface - while the adults nearby were still probing shallowly (jabbing) - see feeding records. None of the adults seemed to pay particular attention to this young bird. (Perhaps young birds peck

1st flying young

Holmes, R
1962

Erolia alpina

30 July Barrow, Alaska
until their bills are strong enough to probe into the heavily matted & thick rooted soil. (?)

31 July Three found with 3 Black-bellied plovers - feeding in the wet polygon area - NE of beach ridge magnetic station - see feeding records.

One bird [struck through] was found to probe in the backs of moss — probably after fly larvae.

1 Aug 5 Adults seen in the No.-Vak - wet polygon area - feeding on the low ridges between pools. No other notes between them - So. end of Footprint Lake - Vak marsh - insect area - Brother's Area. Also the number in the No. Vak area has decreased by 4 fold during the last week. No Immature seen.

2 Aug None seen in No. Vak or Insect Area

3 Aug One Adult ♂ with 1 flying immature - in wet polygon area So. of Wohlschlag. Young was feeding in black mud - see feeding trials & Adult remained on the low inter-polygonal ridge - feeding most of time but also keeping a close eye on me & on the feeding chick. Every so often - it gave a weak version of the trill - prrrr - which usually made the

Holmes, R.
1962

Erolia alpina

3 Aug Barrow, Alaska
immature stop feeding & look around; - then it would usually resume feeding. - The young bird was collected.
Only one other bird of this species noted (1 ad ♂) - which was in the same area - otherwise none were seen between camp & Ookpik Slough.

4 Aug Only two seen in North Salt Area - when was crossed three times in search for more of this species (2 ad.).

5 Aug None seen near Beach Ridge - Elson Lagoon area.

6 Aug Large numbers encountered today in several localities. A group of 3 was first noted - about 300 yards s.o. east of garden ridge - these were watched & feeding action recorded - nearly all feeding was being done in low-center polygon trough & ridge - with occasional periods spent in the wet pond edge. Later a group of 15 was found & then one of 18 - (part of the 1st group may be included here -) so between garden & 1000 yds south - there were about 30± birds. All of these were adults - some in seemingly good summer plumage - some 3/4 into winter dress.

Holmes, R.
1962

Erolia alpina

6 Aug. Barrow, Alaska

In the afternoon - the beep-call note was heard frequently while I was doing the obs. counts, & then a flock of 14 was found near Pond-K - again all adults in varying molt stages - 1 coll.. Another flock of 8 was feeding in the gravel ponds near Britton's Area & 1 immature (coll.) was feeding nearby - 1st one seen in days.

All of this influx - seems to indicate that birds are on the move & that they have just moved in here - whereas the local individuals have already left - probably with few young having been produced this year. The birds collected today were not very fat - & all were molting (although one had molted halfway & those feathers gone to completion - the remaining ones were old).

12 Aug One flock of 25 seen on the flat grassland (very low polygons) SO. of Voth Area. All were adults in varying stages of molt. When I returned from dropping Sullivan near T XI & XII - I could not locate them - apparently they are moving rather rapidly. A group of 4 adults was found 400 yards west of Voth's marsh (near ditch) -

Holmes, R
1962

Erolia alpina

12 Aug Barrow, Alaska
but these were too edgy to get close to. Later- none could be located in the No. VOR Area - during 1 hour of cruising. On the way in a flock of 16 was encountered near the east end of inset ridge - 3 were collected. Feeding seems to be in low drained polygon or slope localities. The birds are in flocks & are probably moving either around the local area - or moving widely through the local area.

13 Aug - A flock of 12 adults encountered between the two meadow lakes on the trip south & again on return - 3 collected. Feeding in wet polygon sites - stomach content yielded mostly ~~...~~ larval Tipula. About 400 yards south of gasline Ridge - a flock of 30 adults - again feeding in "slope" habitat - 1 collected - group was shy & would not allow close approach - would stay together when flushed - alarm note is stiel the burr.
A family group of an adult ♂ + 2 just flying - still downy-headed young was found 200 yards so. of Gasline - Young gave usual alarm note + the adult acted excited but did not give any distraction display. No others except 2 flocks encountered as individuals & collected - seen in the area this morning.

Holmes, R.
1962

Erolia alpina

13 Aug Barrow, Alaska
In the p.m. - none were seen or heard in the No. Voth - Insect Ridge area but 6 immatures + 4 adults were present on Britton's Gravel ponds - along with several mauri. One immature - collected - had primarily chironomid larvae in its stomach - no molt as yet.

14 Aug 10 Immatures + 2 adults at Britton's Gravel Ponds - no indication of family grouping. 4 Immatures along fresh lake - 3 collected - all beginning post-juv. molt - but this is not visible externally yet.

15 Aug Only adults seen between camp - Voth - Footprint + Shrovel - FTP - gosline - Acme Ridge - were three near Gosline Ridge - all feeding (single) together. Two immatures were feeding on the muddy edge of a large lake So. of gosline (in company with 15 Imm R.P.). Three more were feeding in an identical habitat on the west edge of N. Meadow lake + 4 were along fresh lake. No adults were in attendance.

It seems in general - that most birds have moved toward the coast + are now along the lagoons + gravel pond areas. A few are still inland in the wet polygons + around the large lakes.

Holmes, R.
1962

Erolia alpina

16 Aug Barrow, Alaska
One group of 2 + one of 4 in the area NE of the magnetic station - two were used for recording feeding operations. Two flying immatures - independent of the adults were also noted.

In the afternoon - 3 immatures were in the gravel ponds near Britton's Area + 4 more scattered along the edge of South salt lagoon. At the south end of the lagoon - a flock of 16 adult molting individuals was found feeding in the sandy lake edge (most were standing in ankle deep water + all were clustered together - while 8-10 mauri nearby were spread out in usual mauri - feeding behavior.

17 Aug - Flock of 7 Ad. in No. 4th Area - feeding in wet polygon troughs + ridges.

18 Aug - Group of 8 on mud of north salt lagoon - in company with mauri, + Limnodromus scolopaceus. All were adults + some in terminal molt stages. Two immatures were seen later along the same lagoon - these were not accompanied by adults.

Near Brant Pt., a flock of 6 adults was found - feeding in the wet carex-marsh - where feeding was mostly by jabs. No immatures seen in this vicinity - but half way back

Holmes, R.
1962

Erolia alpina

18 aug Barrow, Alaska
To the beach ridge 2 were found feeding in the wet polygon-habitat.
Three adults seen near Middle Salt Lake + 3 immatures along Fresh Lake + 1 just south of AACS (collected).

19 aug Approx. 40 immatures + 1 Adult seen in the ponds along Elson Lagoon - halfway between the POINT + the Duck Camp. Most of the imm's were spread out all through the area - but one flock of 12 was noted. The adult was associated with the flock; it was not far into molt - the black patch being nearly intact.

20 aug 1 Adult + 1 immature seen together on Britton's Gravel Ponds - the adult was collected. No others were seen - N. of Village - Village - Footprint + east to Gasline area

21 aug - Trip to Ootkpik + return. Two flocks of immatures found - 1 of 8 (3 coll.) - feeding in the wet, low-center polygons (SW of Fert Plot) + 1 of 10 - E ear of the Fertilizer plots - where they were feeding on dry - low polygons ("slopes"). A mixed flock of 4 imm (1 coll.) + 12 Ads (1 coll.) was feeding on the "slopes" - on the south side of Wahlschlag slough - 8-10 Golden Plovers + 4 Pectoral were also associated with this flock.

One group of 10 - along with 15 Golden Plover

Holmes, R.
1962

Erolia alpina

21 Aug Barrow, Alaska
was feeding on the north slope of the beach ridge - near the 4 barrels (1 coll.) & 1 flock of 5 was found 200 yds - SW of the Fertilizer Plots - in low-dry polygons ("3 imm.")
Therefore - the birds are still here in flocks on the tundra - adults & immature are generally separated.
22 Aug - None seen in No. visited - Britton Area.
23 Aug Flock of 13 in the British Gravel ponds - where none were seen yesterday - so apparently these groups are moving! A flock of 8 adults was found north of the Wannigan at Ikroavik - none of these were nearing completion of molt - ie still had large black areas on the belly, etc - 1 coll. - also all were apparently ♂♂. No others seen today - but 2 or 3 calls were heard S. of the Wannigan - So the birds are still in the tundra.
24 Aug - Several lone individual immatures and 1 flock of 16 were seen on the ponds (near towards) the Point (halfway). One adult - nearly in complete fall dress - was collected from near the flock of immatures.
25 Aug B.R - C.m - Woho - Elsa - ookpik - gasline - Green R - B.R - A121. The only Dunlin seen today were in the So. Gasline R. area - where

Holmes, R.
1962

Erolia alpina

25 Aug. Barrow, Alaska
a flock of 7 immature & 3 lone individuals were found - feeding along the wet pond edges. Two were associated with imm. Limnodromus. Three adults were seen on the south side of the beach ridge - near the gasline - all three showed at least half of the black belly - but were molting.

It seems that most of the adults have departed - except for small groups + loners - whereas the immatures are still here (or are moving through) + these are congregating - mostly along the shore + gravel ponds + lagoons.

In the afternoon - a group of 14 immature + 1 adult were in the Gravel Pond - near Britton's Area.

26 Aug 6-8 immatures in Britton's Gravel Area - several heard near the float plane - lagoon + 1 seen flying over GULL LAKE. Some flocks of shorebirds (mostly Phalaropes, I believe) were seen along the Sandspit + lagoon - SW of Point Loss - some of these appeared to be Dunlin - but identification was not positive.

27 Aug 2, 2, 2, 3, 1, 2 - immatures seen south →

Holmes, R.
1962

Erolia alpina

27 Aug Barrow, Alaska

of Gasline Ridge + 2 were no. of the beach ridge - near the 4 barrels. One adult was seen south of gasline ridge + 2 Whinnies - were also heard in this area - the first for many days.

Only 1 immature seen ~~[illegible]~~ Britton's Gravel Ponds + 3 were on Fresh Lake. The birds have certainly diminished + now these scattered groups 1 2+3 + singles may be just stragglers.

F.A.P.
1962

Calidris alpina

Barrow, Alaska

(e) Sept 1 ♂ juv. light fat. 61.5

Molt advanced, venter virtually white, with only scattered juvenal (spotted) feathers. Numerous A-D's as well as E's present. Forward, A-C's reaching through cervical region to lower throat. Dorsally, grey prevailing. A-C's reach to lower neck. Some fully grown winter feathers + A-D's on scapular tract.

(f) " ♂ juv. very light fat. 55.3

Molt stage early. A-C's scattered on abdominal and chest regions; upper chest + forward inactive; A-C's on back + scapular, grey evident superficially only in scapulars. No activity on upper back + forward.

(g) " ♀ ad. light-moderate fat 70.5

Molt active, breeding plumage showing only scatteredly on both venter + dorsum. A-E's present not only on body, but on neck + head as well. Wing molt complete except for inner under G.S.C's and secondaries, which are C-D's. Tail molt complete.

(h) " ♂ ad. very light fat. 67.1

Similar to g, but less advanced, old feathers present on head, especially on neck, scatteredly on back + venter. A-E's over entire body, head + neck, new plumage prevailing. Upper tail

coverts C-D's. Tail molt complete.
Wing molt active in inner secondaries
plus adjacent coverts.

EMP

1962 — *Calidris alpina*

Barrow, Alaska

(a) 18 Sept. ♀ juv. light fat. ova < 1 mm. 61.4

12 — juvenal plumage on body underlain
12 — by A-C's on venter, and A-B's on dorsum
10 — along entire tract up to lower neck
44 — region. No molt on head or upper
neck.

(b) " ♀ juv. light fat ova < 1 mm. 60.6
A-C's present limitedly (by comparison with a) on saddle region of dorsal
48 — tract and on lower chest and upper
abdominal regions of ventral tract.

(c) 4 Sept ♂ juv. light fat testis faint 52.2
Body molt ahead of a. On dorsum,
12 — molt extensive along entire tract up
12 — to lower neck. New feathers A-E, some
8 — fully grown scattered among juvenal
8 — feathers. Also A-E's among scapulars. Along ventral tract, mostly
40 — A-B's, some C's from anus up to lower
throat.

(d) 1 Sept ♀ juv. moderate fat ova < 1 mm. 70.1
Body molt as in a, in general. A-B's on
4 — dorsum, mainly in saddle area. A-E's
4 — on scapular tract. A-B's along entire
16 — ventral tract up to lower neck.
24

---

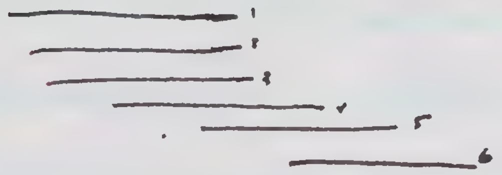
a, b taken mouth of Wohlschlag Slough; c taken Fresh Lake;
g-h taken Meadow Lakes.

Holmes, R.
1962

Erolia alpina Molt

Barrow, Alaska

Primary molt - #1, 2, + 3 seem to be molted almost simultaneously with #4 not far behind. 5 is late in starting



#1622 - secondary coverts molting -

#1 = 1 1/2 c
#2, 3, 4 = 3/4 c
#5 = A
6, 7 = m
8 → -0

#1640. The upper wing coverts are fairly well along in molt - while the under coverts are now mostly in pins. - Specimen preserved in alcohol.

Primary-upper covert - follow the primary molt - ie #1-8 are molted - but #9+10 are not

Holmes, R.
1963

Calidris alpina

25 May Barrow, Alaska
-First seen by Muller on this date - not seen on 23 May.

27 May One individual seen and collected near Elson + Wohlschlag - feeding in grass-sedge area on bluffs. Two other individuals noted north of this location - both feeding. Twice one of these individuals lifted its head + gave the trill which normally accompanies the aerial display. The provocations for these outbursts are unknown.

28 May None seen or heard in drum area - nor Britton - Wohl - Village slough locale.

Just north of Ookpik slough - 2 seen flying (chasing?), landing - the last with wings held up for half second. One flew off + gave the full aerial song - with buzzes + then trill. Later, a chase with 3 birds involved - ??

29 May Two seen south of ookpik - chasing - appeared to be area-conflict. The chaser continued to follow behind the other until a certain point, at which he turned + flew back along the bluffs. No others seen nor heard along Elson - Ookpik - Wohlschlag.

None seen or heard in evening on BR, near Wohlschlag or near Elson lagoon.

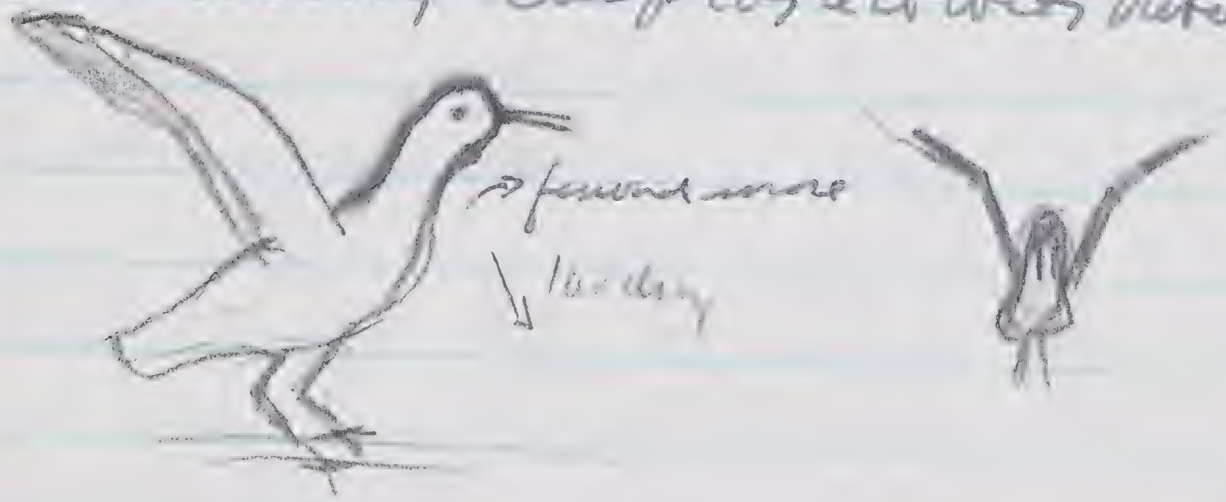
Holmes, R.
1963

Cohan's alpine

2

30 May Barrow, Alaska
one feeding on Voth creek bluffs. Twice he flew short distances & gave the trill as he landed (also wings were held up).

31 May 1 feeding between Wahl & ookpik sloughs, - 3 south Ookpik. All were wary & would not allow close approach. When one landed after being flushed, it kept both wings above its head & slightly flared out & back - while it gave a whinny (= trill). This was the only display activity noted.



1 June Two feeding together between Wahl & ookpik - no others seen - nor heard - these Birds are very scarce so far - since there are large areas along Elson bluffs which are now exposed & very few Dunlin.

Two seen together on Voth's bluff - no displays.

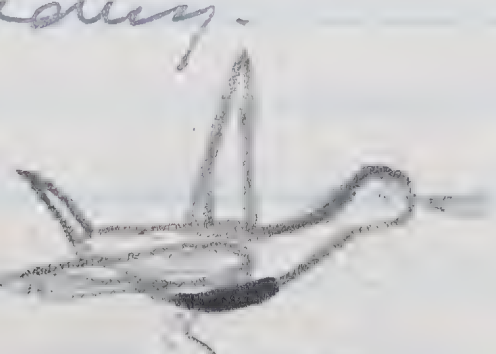
Holmes, R.
1963

Calidris alpina

2 June Barrow, Alaska

Three chasing on large open-patch south of village slough. One gave "aerial" trill from the ground - alone - with no other calls.

Two seen no. of ookpik slough - ♂ landed. walked toward ♀ with left wing held vertical, tail 45°∠ - not spread - in fact looked furled - giving long - trill (but not the loud, ringing, descending - in pitch one given in the air - this was relatively even - pitched & soft. As the ♀ stood there, he lifted his other wing & jumped onto her back where he stood for about 30 sec. - with his wings fluttering. His head up & bill slightly open - giving a soft - irregular (uneven) trill. After this, she moved (out of sight) - he stayed with her & I think there was an attempt at copulation. - He then fluttered off to the side & landed about 6" away. His wings were held up & they were fluttered for about 10 sec before lowering them with normal pos. t. Both birds began feeding.



Holmes, R.
1963

C. alpina

2 June Barrow, Alaska

In aerial display, bird hovers on rapidly beating wings giving churring or crown note. Then breaks into the loud, ringing descending - in-pitch trill of [illegible] 5 ... the bird looses altitude, then when crown resumes, he angles up & gains altitude to about 50' - the trills & drops, etc.. When landing wings are held near the vertical for about one second.

In one case, two ♂♂ - were feeding about 30' apart - one suddenly took flight - (up to 5') + set wings, gliding into area of the other & giving the loud trill - the other took flight

In aerial chase, trilling seemed to be the main call given by the aggressor.

3 June Only birds seen along Elson [illegible] of [illegible] were 2 that were chasing at the mouth of [illegible] - They flew off to the south along the bluffs & did not return to first area - is nomadic. Chase note was an irregular sharp [illegible] - & the loud trill which became irregular in pitch while the birds were in flight

A flock of 6 ♂♂ seen half way to [illegible] (from [illegible]) + at the junction of

chase note

Holmes, R.
1962

C. alpina

3 June Barrow, Alaska
[margin: flock ♂]
Cokpik - a loose group / 8 birds - ♂♂ as far as I could tell - were found. From this group, 2 + sometimes 3 birds would chase around over the exposed tundra - meanwhile giving the … chase note & the trill - alternately. A number / these birds were collected - see catalog.

4 June "Pair" seen chasing over north beach ridge, just west / magnetic station. Several other individuals - which seemed to be members of a loose flock - of males - Some chasing was noted & several displays were heard - these were all between Wolf & Cokpik sloughs -

It seems that the early-arriving, single ♂♂ were not here this year - except for a very few - i.e. those first seen & collected - now during the last 2 days, flocks / ♂♂ are now coming in - to the tundra.

5 June Several heard in Brotton & W. this area & along Vork Creek. The birds seem to be spreading out over the tundra now - since many areas are opening up.

Holmes, R
1962

C. alpina

5 June Barrow, Alaska
Flock 1 4 (♂♂ - incl. about 1♀) - I believe) just south of Weather Sta. area - along Elson Lagoon. (collected -) no displaying seen - heard in this area.

N. of the block type polygons - a pair was found. The ♂ walked in a half-hunched posture giving a dry, trill note: rrrrch, rrrch, ... (trill at first & then an "ch" - this was continued for 3 minutes - while he performed a brief nest scrape - when he sat into a depression (no cup there on later inspection) turned around 3 or 4 times, moving breast into the cup & then stepped out. ~~twice more~~ This was seen 2 more times - in different spots - but in these cases, he just squatted into a depression & then moved on again. The ♀ was 50' away feeding. After these scrapings - the call described above became higher in pitch & was the "alarm call: rch-rch-rch.

no cup

The ♀ was shot; the ♂ flew off but returned & landed about 15 feet from her - gave several sequences of rch, rch, rch - shot at - missed -

Holmes, R.
1963

B

C. alpina

5 June Barrow, Alaska
flew off but returned again (to the ♀ — who had not moved since first shot) + this time he was mortally wounded.

6 June Several aerial displayers were seen & heard near ORL Area & along village slough — all birds seen today were in pairs - no flocks -

nest A NEST with 4 eggs was being incubated by the ♀; the ♂ was in the vicinity + joined the ♀ at a distance of 40 yds from the nest; he then went on to give an aerial display. — The nest was located 200 yards west of village slough on the side of a large (5 acre) open area — the cup was located in sparse grass-sedge + was lined with wet lichens, moss, + cut grass blades. The permafrost was less than 1" deep & I had trouble sticking in a stake.

nest A SECOND NEST with 4 eggs + the ♀ incubating found 30' east of ORL Road - 100 yds. south of Britton's Area. Located on low flat, grass-sedge covered polygon. Nest lined with cut grass. ♀ flushed off when I was 3 yds away, flew low over the tundra for 10', landed + pecked at ground several times + watched as I approached

Holmes, R.
1963

C. alpina

6 June Barrow, Alaska
the nest; she gave no call or distraction display. She returned to the nest very soon after I moved away.

pairs — Several pairs of dunlin seen between Britton & Voth areas & displays were heard from a distance. The trilling - was given at 12 in 7 sec - or almost 2/sec.

7 June [mating] Several displays heard on Elson bluffs - + 1 nest cup display seen - where ♂ settled into cup after giving the dry trill note described - page 6 : The ♀ was only 3-4 inches away - "looking" at the ♂. After 1 sec, he stepped out & both birds moved away feeding.

Saw displays along Voth bluffs -

8 June A chase on Village flat bluffs - between pair - call not heard. One display heard near Elson - 1 displaying bird collected on n.p. shore of Wobberchley Slough.

9 June 2 pairs seen between Fertilizer plots & Mouth of Ookpuk - both feeding in small (one 10' dia, other 20' dia) patch of exposed tundra. -

Bird seen flying down from aerial display - set wings in shape of V + glided for 50' low over the ground, giving [illegible] trill. - He landed

RTH
1963

C. alpina

9 June Barrow, Alaska
(for 2 sec)
Raises both wings at vertical. Then lowered one wing, then the other, 2 sec. later. He then went off drawing up the signal apparently given to bird by food bear & the latter chased.

10 June Nest #2 destroyed by weasel (vehicle!) - all 4 eggs were crushed - no sign of adults. This has occurred sometime in the last 2 days. No bird seen - heard near Britton's Area.

One display heard in Voth Area - very little display activity this morning - by any bird species.

One heard at south end of bread ridge - very little activity in the evening.

11 June Several displaying on gravel ridge - but none were seen or heard on bread ridge. None seen - heard ridge in afternoon. - Nor were any heard in Voth Bluff area.

12 June One bird displaying a renewal plot - renewed. - No mate seen.

None seen or heard in the AACS area. Birds really seem to be lacking this year - no flocks - no evidence of birds moving through - either as flocks or pairs.

Holmes, R.
1963

C. alpina

15 June Barrow, Alaska
Very few found on census plot - see census sheets. One nest located near stake 15.7 - with 4 eggs + inc. bird (sex?). The eggs had a light tan background color with dark red-brown spots on the pointed — becoming splotches at the round end. It was located in the center of a 30' diameter flat, topped polygon covered with moss, lichen + only scattered grass. The eggs were conspicuous from above, only a few blades of grass covered them.
Display activity was at a minimum today - no more than 15 aerial displays heard in 6½ hours on the plot. Only 1 pair encountered in travel to Ikroavik.
16 June Pair collected south of Voth Area - in the midst of egg laying. Wing molt noticed yesterday in displaying ♂ + one specimen collected today had lost primaries 1+2. Again there was little display activity
17 June Again, there was very little activity on census plot. Another nest located near 13.3 with 4 eggs - the incubating bird jumped off the nest when I was 10' away, + went fluttering + bumping over the tundra, giving the high-pitched squeal.

RTH
1963

C. alpina

17 June Barrow, Alaska
Nest located on edge of 20' polygon - in clump of grass, which was surrounded by moss & lichen. The eggs were 40% covered by over-hanging grass. No bird was displaying in the immediate area - the closest was one bird near 10.4.

A Nest was located 10' SO of Stake 4.0 < Tryplevic 6 - Beach Ridge. Pitelka plot. - The incubating bird - jumped off the nest & flew 30' - landed with wings held up & swept back - giving the lowed ringing trill as he did so. - 4 eggs - located - grassy - polygon (1') - eggs - 52% covered - cup - grass blade - lined.

Very little display activity was heard in the evening. Two-three songs given from birds along the beach ridge.

18 June 2 Nests (# 6 + 7) - 1 4 mi SE of South salt lagoon & are 200 yds South of the lagoon - both had 4 eggs & ♂♂ were incubating. One (#6) was in a tall sedge - covered polygon eggs 90% covered. #7 was in tall grass - 70% cover eggs

19 June Birds hard to locate in beach ridge - Finally a pair found on top of ridge S E of Mos. Station - in nest -

Holmes, R.
1963

12.

C. alpina

19 June Barrow, Alaska

nest scrape

scraping display. First the ♂ settled into the cup & began turning with his breast pressed to the bottom of the cup - & the white under-tail coverts being very conspicuous - the ♀ walked (almost a run) towards him, he stepped out of the cup & she stepped in & began rotating. The ♂ stood about 3" away with no special posture. Both then took flight - the ♂ gave 3 kwa's on stiffly beating wings & then set his wings at a steep V, glided 20', giving the loud ringing trill (the bird was flying low - never more than 6' above ground). The ♀ followed behind the ♂ & as he finished his trill & landed, she set her wings in a V & gave a trill - which was not as long as that of the ♂♂ but was of the same general quality.

♀♀ trills

Thus, ♀♀ may give sound the same calls as the ♂ - However, I have never seen for collection. ♀ in a hovering flight display.

One of the pairs located to east of beach ridge. 1 ♂ with the ... patches was collected.

Holmes, R.
1963

C. alpina

20 June Barrow, Alaska
Nest with 4 eggs & inc. ♂ - on flat grass-sedge flats - 5 yds south of Nunavak creek, 52 yds east of Gaswell Road. - In tall grass which gave eggs - 80% protection. The ♂ did not give a dist. display - simply flew off the nest - gave a loud trill (while - set wings) & landed - 60' away. The then went into a brief aerial hovering display - landing with trill given while he glided on V-shaped wings.
These birds encountered in the evening - west of meadow lake - collected.

21 June Nest # 9 - 8' W. of Cakeeater Road (just so of Trapline 3A - with 4 eggs & inc. bird. - Nest in tall sedge - small mound - eggs were 70% covered by over hanging vegetation
Nest #10 - on plot (near 3.3) - ♂ inc. - jumped off nest & flew to the long "burps" flight on the ground & then in ~~[illegible]~~ ~~[illegible]~~ - hunched - ruffled posture - giving the remarkable high-pitched squeal notes. - 4 eggs with 40% cover - on small polygon. Covered with moss & grass & sedge - Cup was lined with dead grass blades

Holmes, R.
1963

C. alpina

21 June Barrow, Alaska

Display activity was extremely low - only 1 aerial ♂-♂ (or any kind) chase noted. 6 displays were heard during 7 hours on the plot. Nearly all the nests have been stumbled on to accidentally - since the birds aren't seen until flushed.

22 June As noted above, chasing either ♂-♂ or ♀-♂ has rarely been seen this summer. Only occasional displays are heard.

Nest # 11 - 30' E of gaswell rd - 300 yds north of footprint lake - On side of moss-lichen covered polygons - scattered flowering heads of Poa around eggs giving only 5% cover. The nest was only scantily lined with grass blades.

Displayer on beach ridge - gave 7 kraās in 5 sec + 15 in 10 sec with a pause in between. The 40 kraas followed by a 3 sec trill, 5 crans, 2 sec trill, 2 min of kraas - followed by a long descend trill of 5 sec. total song was thus lasted 2 min - 20 sec. - the bird then landed, keeping both wings at vertical for about 1 sec before lowering them into normal position.

Holmes, R.
1963

C. alpina

23 June Barrow, Alaska
Checked the area of Voth bluff - south & east of the cake-eater site - where RB's were fairly common last year. This time - there was only one bird (probably a pair located here) seen here & no display activity was recorded.
24 June None seen in Insect areas. - west of Voth.
25 June Little display activity on census plot today. Two birds when flushed from nests gave trills. One displayer heard off the plot; twice on the plot. No further - no chasing.
Another nest (# 12) located on plot - near south end - with 4 eggs & one ♀♂. - No distraction display. Nest located in a cup which was used last year (stake was still in place). - eggs 80% covered by the overhanging grass.
26 June One bird on E'son removal plot - could not be collected. A pair located at south end of beach ridge - the ♀ was collected - she had just laid her first egg. - No displ. seen or heard.
In the afternoon - pair was encountered E of Voth - ♀ (with a very short bill) was collected; the ♂ remained close by for a minute or so - but was out of gun range. - She had developing ova - but none had been laid (at least

Holmes
1963

E. alpina

26 June Barrow, Alaska
recently - yet she had a fully developed inc. patch including vascularity - Coll. follies were not in evidence. Thus this was probably a second clutch which she was about to lay. The first may have failed.

28 June One bird found south of broad ridge - near the gasline. collected. It was a ♀ - with well-dev. brood patches. Once when flushed - she landed 20' away, held wings up for ~~sec~~ a half sec & then lowered them.

A ♂ was collected near the census plot in the afternoon. He could not breed - was given after he was wounded & as I approached him.

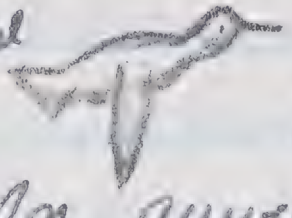
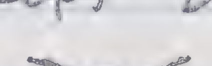
29 June Almost no display activity on the census plot today - but 1 ♂ near 5,4 was seen in nest-scrape & aerial display. As the bird is in the air giving the aerial churring - he quivers on outstretched wings for about 5 sec, then there is a very brief pause - where the wings are held in a down-curved position & the bird glides
There are times when the bird will continue on quivering wings for periods up to 1 minute - but the pauses are usually more frequent.

Holmes, R.
1963

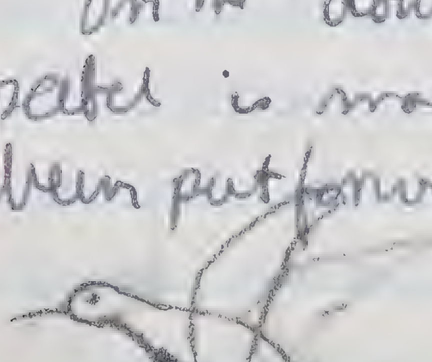
C. alpina

29 June Barrow, Alaska

Aerial display

While churring, the posture is such that the bird is tilted slightly upwards. The head is held even higher,  & the tail is spread partially. On quivering - the bird is actually hovering. but usually progresses forward & upward slowly. At times, he may move considerable distance (ie cover an area of several acres) over the course of 3-5 minutes. The bird oft spirals up but usually faces into the wind when in one position for any length of time. This churring posture is then interrupted by periods where the loud, descending trill is given. At these times, the bird sets its wings above the horizontal plane , glides down gently for 3-5 sec - giving the trill. He may then go onto the ground or flap several times, gaining altitude & then resume the quivering wing display.

On the downglide - the black belly patch is made conspicuous by the chest been put forward, head & wings up & thus the black patch is thrust into view. & this is further accentuated by the contrast with the white under



Holmes, R.
1963

E. alpina

29 June Barrow, Alaska

wing linings. The bird then lands - "belly first" - & the wings are held up at the vertical for ½ to 2 sec before lowering. Occas. on the ground - the bird will raise one wing toward another bird of any species or toward me & wave it back & forth slightly - but not to the degree found in bairdii.

The "down glide" posture is also used in another way - ie other than in return from aerial hovering. The bird when feeding on the ground may suddenly take flight - rising - [illegible] wing beats to a height of 8-15 feet - then set its wings in a V - usually sharper than that described previously - - & the bird glides back to the ground. During the glide

the trill is given. This last display may be in response to another Red-back nearby & would then be considered as a "weak" form of territorial advertisement. (The stronger terr. adv. would be the chase or aerial hovering.) Following the glide the bird may land with its wings up & then resume feeding or it may land & then take off in a chase or the chase may

Holmes, R.
1963

E. alpina

29 June Barrow, Alaska

begin from the end of the glide - by the bird switching to a fast flying pattern & taking off after another bird

The aerial churr - is a low-pitched, relatively grating note, given over & over again continuously. At certain times, as the bird climbs & begins to churr - he will give a high pitched trill note ch-ch-ch-yeh - & then this turned into the kraa-ing (this is the note given on the Cornell recordings - which is followed by the long trill). This trill note is also given on the ground upon disturbance. Another disturbance note is a trilled (musical in quality) treep - which is given emphatically. This is just a version of the "call note".

Today a ♂ was in quivering-wing display at first high & then low over the ground - both times, circling over an area of 2 acres. He then landed in down-glide display & kept his wings at the vertical for one second. He then ran through the short grass, pecking back & forth (but apparently not feeding), and after going about 10' across a grassy polygon top, he assumed a nest-approaching posture (rear end slightly up - still pecking side to side) and then he stepped into a nest cup and began scraping. The posture in the cup

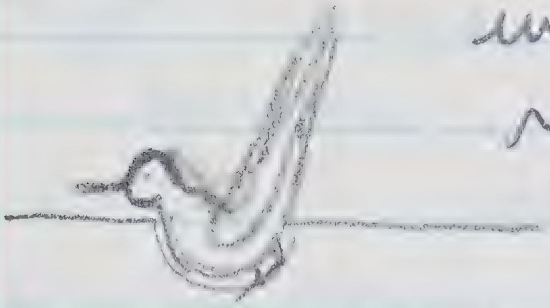
nest scraping

RTH
1963

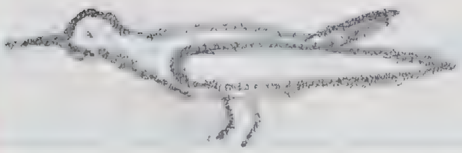
E. alpina

29 June Barrow, Alaska

was such that the tail was in the vertical plane so that the white under tail-coverts were very conspicuous from the rear. The bird then rotated from side to side wagging



the elevated tail + folded wings. The bird did not turn more than 15-25° in the cup - so it kept its original orientation - (+ as it turned out toward the ♀ who was standing quietly 4' away). The rotation seemed to be done by pressing the breast into the bottom of the cup - the tail wagging was a consequence of this motion. After about 20 sec, the ♀ arrived at cup, the ♂ backed out, keeping the tail + folded wings at an above normal position - then lowering the wing tips with normal position (leaving the tail in a half-cocked way). Tail not spread. The ♀ then stepped into the cup, turned completely around 3 or 4 times, settled into the cup - in a normal incubating posture + then after about 10 sec, she stepped out. During this performance by the ♀, the ♂ stood at the side of the cup - just inches away from the ♀ and was in the posture shown above

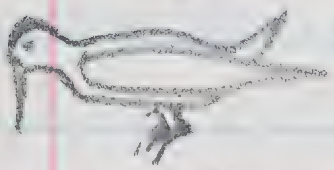


RTH
1963

E. alpina

29 June Barrow, Alaska

except the bill was pointing straight



to the ground. The bill was not open - & no sound could be heard (but a strong wind was also blowing in the wrong direction). As she stepped out (the ?) the ♂ took flight - with feet dangling, gave reh-reh-reh & then set wings & glided giving the long trill. The ♀ then flew nearby & joined him - both began to feed. No further activity for this pair was noted today (except an aerial song was heard from that direction later in the afternoon).

There was little display activity on the plot - except for the above-descr. pair. Birds of this species are still scattered on the plot - but there is little aerial activity.

1 July 1 aerial song, heard near gasline ridge - no others seen today - except a pair on beach ridge - which took flight & flew east - out of sight (?)

2 July No display activity noted in inner area - nor beach ridge

3 July Ikroavik: Aerial displays today were not numerous but several were seen &/or heard. Most aerial (& ground) calling consisted of the long trill - alone - not accompanied

Holmes, R.
1963

E. alpina

3 July Barrow, Alaska

by the churring. In some cases, the birds would fly up to a hovering position, give 2-5 calls & then go immediately into the trill - which lasted anywhere from 3 to 8 sec - the average being 4-5. The 'trill' note - was given in chases - of which two were seen. In this case, the trill was not regular in tempo - but varied - probably due to the flight action of the thorax & other consequent muscular action. It was also not descending in pitch or volume - but kept one general level. Also in chase, the aggressor would give a whistled, high-pitched & shrill zeeeet - (more shrill than "call note) - This note would be given at about 1-2 sec intervals. When full note wasn't heard - this could be represented as beteg or 'eeep & could be interchanged with the b'zeep of the call note. These last notes are also given on the ground in a disturbance situation.

Aerial churring - the previously used 'kraa' - is not completely satisfying for the note - it is a harsh & somewhat dry rrorrr - or ra-rrr ⌒ ⌒ ⌒, there is some variance in pitch but in

chase note

RTH 1960

E. alpina

3 July Barrow, Alaska
general is consistent
When RB-12 was checked - the ♀ sat on the eggs until I was only inches away - & then exploded off the nest & went into a violent distr. display - with wings out to side & fluttering feathers ruffled etc. - & went shuffling off. She would go about 10' - stop & press herself into a small depression & then look back. After several seconds, she would shuttle off again. Then stop - huddle into a depression & off again - during all this the high-pitched squeak was given. Finally she sat on the side of a polygon 30' away from me & the nest - squealing & still hunched over - while I examined the nest - She then led me off in a rodent run —
New nest - #14 - near 10.3 - with 4 eggs & ♂ incubating - who flew off the nest when I was 200' away. On slope in tall grass & sedge - 15% cover for eggs
New nest - #15 - near 6.1 - with 4 eggs & inc. bird - who didn't flush until I was 3' away & then it exploded & went shuffling off - as was described for the bird above. Nest was in tall grass & sedge (Eriophorum) - eggs were

Holmes, R.
1962

E. alpina

3 July Barrow, Alaska
20% covered - but blades are hung over nest & produced good shadows which gave greater protection. - located on small mound in trough between 2 large grass-covered polygons.
Nest - #9 near cabin at road was empty - both adults were nearby & were doing d. displays. Several young were in the vicinity - they were not seen, however.
5 July Snowed last night - no display activity, / only brief today - beach ridge census plot. In afternoon snow was melting fast. Nest #6 - S. / So. S at igloo was intact & being inc. by the ♂ which flew off at our approach. At nest #7 - there was 1 young which probably hatched late yesterday or early today (he was dried off at 1400 & three eggs which were not pipping yet). The ♂ was in attendance but did not come near the nest - instead he stood off 30 yds & gave several long trills, then flew off - only a brief distraction display was given at our approach.
One other wetbird was seen near Voth area - no others seen during the travel.

Holmes, R.
1963

E. alpina

6 July Barrow, Alaska
I collected a ♀ in the northeast of gravel ridge today - which was still laying eggs. The male was present but was not collected. None seen - heard in afternoon at insect plots

7 July Intensive Plot. Birds were trilling today - both from the ground & while in flight - buzzing was very infrequent - Trills were given in alarm, & excitement & when the bird was surprised from a feeding site. No chasing &/or courtship activity seen -
Nests #10 — gone - 1 sterile egg present
#15 - 4 eggs + ♂
14 - 4 eggs + ♂
4 - empty - adults were excited nearby
3 — empty - 1 sterile egg
12 - empty - ads nearby & excited.

8 July Beach Ridge Plot - Nest #16 - found near north end of plot on east slope of ridge - on a small mound - grass & petasites provided 20% cover. The ♂ came in, landed giving the trill & after a minute or so he walked to the nest & started to incubate. No other trills or display of any sort were noted.
Nest - #5 - was empty - but the adults were nearby & excited.

Holmes, R.
1963

E. alpina

8 July Barrow, Alaska
Nest #6 - gone today - but both adults & probably young were nearby. All birds were gone from #7. At #8 - 3 eggs were pipping - these young will probably be out tonight. No display activity - brief trills given by ♂♂ at nests.
In evening 1 bird was collected near ARCS. - One trill (5 sec) heard in distance.

9 July Nests #14 + 15 - still being incubated - both adults in attendance at each nest. No aerial hovering - but when birds are disturbed they will fly into the air & give a version of the long trill - which never lasts more than 3 sec & often did not drop off as far as trills did earlier in the season
ie
eeeeeeeeeee - several repeated - succession. These are given from the air or from the ground & are more given in disturbance &/or alarm situation. - They do not seem to be directed toward other birds of the same species.

10 July Two broods - 1 one day old, the other 2 days old - located - south side of gasoline ridge - some of the adults & chicks were collected. In one case 2 ♂♂ were

Holmes
1963

E. alpina

10 July Barrow, Alaska
collected with 2 chicks - probably the ♀ or ♂ just came in when the first became excited. The nest frequent when eggs with the young with bzeep - & the start trill. another one bird also collected from pond area - n. of outh, - no young seen.

11 July Nest #17 located - b. r. census plot - with 4 eggs - on east side of ridge in moss & scattered grass slope - no cover from vegetation (grass & sedge). One long trill heard this afternoon.

12 July Flock of 12 birds located 100 yds south of north salt lagoon - 2 collected were ♀♀ - must be birds which failed to bring off young - or they have moved in from south when nesting was completed sooner. (These ♀♀ had incubation patches - on one, they were being refeathered).

flock - ♀?

A ♂ with 2 young just north of corner of beach ridge - the ♂ & 1 young were collected.

chick

Nest #8 checked again & the "pipping" eggs contained dead chicks. They have been there was for at least 3 days. No sign of either parent was discovered - the eggs had small holes (1/4" in diam.), which they had pecked themselves - apparently or probably - the lack of warmth normally provided by the parents may have caused death.

Holmes, R.
1962

E. alpina

13 July Barrow, Alaska
Nests on plot still intact - there is possibly another nest near 23.4 - this bird gave a trill when flushed & a brief aerial flight - such trill (long) preceded by two brief rel-rel -
14 July - 2 nests on beach ridge census plot were intact. At one no adult was seen but eggs were warm. No display or song activity
Located one ♂ + at least 2 chicks near Voth Slough in afternoon - collected.
15 July One bird collected near gasline ridge - otherwise none were seen or heard.
16 July Only 2 - adults seen in travel to gasline ridge - across & back - in west area & return. These were together - south of both area - No young were in evidence. They were too wary to collect - so they may have been moving.
Nest on beach ridge #16 still intact.
17 July Flock of 6 ♀♀ in polygon area south of Voth & north of footprint lake - 2 collected. One flock of 3 (sex?) on Ikroavik census plot. The two nests on the plot were intact & being incubated - in each case both adults were present at the nests. A possible nest is near 8.2 & one near 23.4 - but these have not yet been located.

flock 6 ♀

Holmes, R.
1963

E. alpina

17 July Barrow, Alaska

Trills were heard today - most of these were brief - 2-4 sec; but two lasted for 8 sec - They were given from the ground when disturbed or when the bird was in flight. One case of the latter was seen where a ♂ flew up to 20' - & then swiftly downward with his wings arc down ⌣ & slightly vibrating or fluttering them - in a partial hover-like way - giving the trill.

No young were seen in all the travel today.

18 July Nest #16 at north end of beach ridge census plot - was being incubated by the ♂ - who flew off at my approach - gave a brief flutter flying across the grass & then disappeared. This seems fairly typical this year - very few seem to stick around.

-Nest #17 - had hatched during the last 3 days - no sign of adults or chicks.

Mixed flock of 8 ♀ RB & 4 ♂ PS - seen on grassy flats, east of beach ridge - 1 ♀ RB was collected. - Feeding by pecking on slope.

40 RB's seen in afternoon in Voth-Upper Slough. Unset - on Buddy's Area.

Holmes, R
1963

Calidris alpina

19 July Barrow, Alaska
Two bird seen today - over all the country covered (b.v. - yards ridge & south of Voth Voth Slough & to the coast). - One adult collected. The other bird seen was also an adult - no young.

20 July 1 Ad seen in Footprint Lake. - Both nests on Ikroavik census plot were intact - both adults were at or near each nest - 2 were seen near 23.4 again - but nest not found. Three trills heard - no other activity;

1 chick caught in bog on gulch ridge.

21 July Flock of 3 seen on the beach ridge near the census plot: 2 ♀♀ were collected. Later another group of three was seen on the east slope of the ridge - 1 ♀ was collected. - All of these birds appeared to be ♀♀.

22 July One adult ♂ + 3 just flying chicks collected near North meadow Lake - in wet marshy habitat. Several other broods, 1 of 2, 1 of 1 & another of 1 - were located south of Wohlschlag Slough. These were mostly of young chicks - 2-5 days old (see catalog) - The brood counts above are based on the # of young seen - so they may not be accurate.

flying chicks

Holmes, R.
1963

C. alpina

23 July Barrow, Alaska

Two nests on Ikroavik plot had hatched during the last 2 days - in both cases the 2 adults were nearby - giving the bzeep or ud-ue call - but the chicks could not be located. These were the last nests to hatch - of those I had located. One ♂ from N #15 - when flushed flew 10' - then on downcurved wings - he glided to the ground - giving a 3 sec trill. Only one other trill was noted today - it came from a distance south of 25... It was preceded by 3-4 vocal krrra notes.

No others were seen on the gravel dunes or beach

24 July Group of 3 ♀♀ in upland country south of Wahlachloq Slough - 1 collected. One trill heard in this same area.

25 July One flock of 4 on Ikroavik census plot. Two or three others seen on plot - one heard giving a trill while gliding on quivering wings

None seen along beach or gravelline ridges - south of coast guard line.

One flying chick seen in upland area north of Footprint lake.

RTH
1963

C. alpina

26 July **Barrow, Alaska**

Travelled south to Ookpuk slough via central marsh & return. Saw 2 adults & 2 flying chicks (1 of each coll.) & 4 other Ads were in the area & were probably moving. When the chick was shot - the ♂ came over near it, gave a fast rid-rid-rid & then turned & began to feed nervously nearby during which began some bizarre notes. One bird (this ♂?) gave wing flash when landing - keeping the wing at the vertical for about 2 sec & waving it back & forth. Two adults seen on Elson bluffs, south of Wohlschlag - 1 gave a trill. 3 Ads seen with 4 ♀, 13 ♂ pectorals south of Wohlschlag.-

Another - ♂ + 2 flying chicks seen in this same area - the ♂ & 1 Juv were collected. All feeding today was in upland situations, this latter group & the flock with the PS were in a wet swale - pondy situation - in the upland. The birds are feeding exclusively on adult insects.

In the afternoon, 2 Ads + 3 flying chicks were seen near transect IIA-D. 1 ad + 2 chicks were collected. - in high polygon-wet trough area. ♂ are more solicitous towards the chicks & will watch with

Holmes, R
1963

C. alpina

26 July Barrow, Alaska
wounded bird (their chick) - gave the
[illegible], walk around them & then
move off a short distance & feed -
perhaps a displacement activity.

28 July Group of 3 Ads with PS & GP - in wet area of Footprint. Group of 3 in Shrewmite census plots & several singles seen in the county inbetween. One family group of 1 Ad & 2 (or more?) chicks seen in Footprint Lake. One flying chick was collected. One flying chick also seen west of Footprint Lake.

29 July Group of 4 Adults North of Voth area. - 2 collected. Two adults seen together - east of broad ridge but in polygonal area (with wet troughs) - 1 collected. No young seen - no big flocks - the bird seen scarce for the season.

Feeding is being done in upland polygonal tundra -- but now after the heavy rain - everything is wet.

4 Aug 2 Ad feeding on polygon ridge - North of Voth area - in marshy-type habitat. Too wary to collect.

5 Aug. Birds seen in vicinity of Test. plots - polygonal - marshy troughs - 3 Ad, 1 Ad + 2 I, + 3 Ad. These were all feeding in upland situations - Six were collected. 4 Ads at So. c.m. (marsh) & 1 So 1 NBR - upland.

RTH
1963

C. alpina

5 Aug Barrow, Alaska
In afternoon - 12 Ads + 2 Im were feeding at the gravel pond near Britton's Area. (2 Ads collected). 2 Ads in polygonized area north of Voth Area - but 4 Ads seen together - in the same general vicinity. The birds seemed to be on the move - & most of them were in upland tundra - with the major exception being the flock near Britton Area.

6 Aug 2 Imm. seen flying across Footprint Lake - no other Im seen today. On the plot - several lone adults were seen & heard. 1 ♂ was seen near 8.7 - with 3 down chicks - not more than 3-4 days old. The chicks were seen thru Binocs - but could not be found when approached.

8 Aug 1 group of 5 Ads seen near Fest. plots - 1 group of 2 north of F. plots + 1 single south of BR. -- no immatures observed.

9 Aug 4 Ads in a group - north beach ridge - 2 separate individuals seen in pond - polygon area east of Pitelka's plot - but feeding along a ridge - not in pond. - No immatures.

10 Aug Flock of 8 in No. Voth Area - all adults - 1 coll. Flock of 12 Ads + 2 Im at gravel pond (Britton Area) No others seen.

Holmes, R.
1963

C. alpina

10 Aug Barrow, Alaska
Travelled south past meadow lake - saw 4 Ad RB in flock - S of gaslineney - saw 1 Ad + 2 Juv RB (1 of latter collected), 2 ♂ RB, 2 ♂ RB. - Then at first plot - saw 3 ♂ RB, 6 ♂ RB - at south end of C.R. - 1 single adult. Three adults + 1 J collected. These 2 Juv that were seen today are the first seen on the tundra for a week or more now. All birds except the one immature that was collected - were feeding in upland situations altho at times they were to be found in the too marsh - polygon - situation. The immature was feeding in 2-3 inches of water in a small pond - getting caddisfly larvae.

12 Aug On trip to Ookpik Slough & return - 23 RB Ads were seen (1, 1, 1, 1, 2, 1, 2, 3, 1, 2, 1, 1) - & these were in small groups - as is evidenced above. Most were found on relatively well drained slopes (every thing is wet now - with all the recent rains). None were collected. A possible record of an immature with 2 Ads - near first plots but this could not be verified.

13 Aug Trip to gasline - circuit - Britton Area - None seen - exc. in Britton's Gravel pond where 2 I & 3-4 adults were seen.

Holmes, R.
1963

E. alpina

14 Aug Barrow, Alaska
None seen - tundra - between Britton's Area + Insect plots. Four adults feeding close together - were along the gravel ponds near Britton's Area.

15 Aug None were seen north of Wohlschlag flats - but on the upland ground to the south - 1 Ad, 6 Ad, 7 Ad, 1 Ad. - where 1 was collected. Sol central marsh - 6 Ad + 1 Im, + single Imm. Near the meadow lakes - 3 Ad. Most feeding was in the polygonal or flat upland ground - by jabbing method - the two Imms were collected.

16 Aug See journal for listing - several groups of adults, one with 1 Im + 1 immature were seen. Most were feeding in drained polygon - upland areas.

18 Aug One group of 3 between the meadow lakes - One of 3 - south of garden ridge - no others were seen. Feeding again was in upland habitat. - Only adults seen. A group 3-4 Ads + 3-4 Im seen by Child near Fresh Lake.

19 Aug 2 Ads at Britton's gravel ponds - none on tundra in N. work area.

20 Aug 1 flock of 8 Ads, 1 Im, 3 Ad, + 2 Imm with Dowitcher, 1 PS, + 1 WS. All adults in drained ground - the immature with flock in wet ground.

Holmes, R.
1963

E. alpina

21 Aug Barrow, Alaska
(marshy - with ponds + ditch formed from old weasel tracks - soil gasoline maps - [illegible] from [illegible] Slough).
Birds - especially immature RB are very scarce this year.
22 Aug One flock of 6 Ad seen NE/magnetic station + 1 Ad RB see east bridge - no immature seen in the area.
At Britton's Gravel Ponds - 1 Ad + 1 I were seen - no other.
On trips to First plot at 2100 - no RB could be found.
23 Aug Flock / 8 Immature at Fresh lake - feeding on Chironomids - 3 collected were in moult. No adults seen.
24 Aug 2 Im in Britton's Gravel Ponds - none seen in tundra in w. of [illegible] - Insect area.
25 Aug Drove south past meadow lake - none seen - south of gasoline R. - 1 Ad, - 3 Imm + 6 Ad. in one flock - flying SW + 2 Ad seen south of central marsh.
The lack of immatures this year has been striking - certainly fewer than in recent years. Ads seem to have stayed longer - or at least are seen more frequently.

1962
17 Aug.

Calidris alpina

molt -

#2387 - crown = E, but with 2 cm of bill on forehead, feathers were A-E. Dsn had scattered C+D's mostly in center but a few toward edge of tract. Lower back - rump & upper tail cov = E (+ 2 B's - which seem insig.) [rump fea are tipped with light gray]. Most molt on Vn. is at lateral edge of tract on both sides - C's + D's - same true of breast & belly. Scatt C's + D's on sides of head (2 around auricu - rest seem to be E (back - dorsal part - of neck with ½ c's).

- no molt on wing coverts. by them - the bird is an Imm.

#2392 - further along in molt than 2387. - Dorsum was complete exc. for 4-5 C's on each sc sp. tract. throat area from bill to sternum was E, but breast on both sides & extending posteriorly to lower belly - there were scattered C's + D's. Side head has only a few D's & was further adv. than breast.

- by wing coverts = Imm.

2398 - scattered C+D's in all body feather tracts, inc sides of head - but most heaviest on lateral edge of tracts - esp along neck region

- by coverts = Ad

1963

molt

17 Nov.

2393 - dorsum completed exc. for forehead with C+D. lateral edges of ventral tracts with C+D - but central area is nearly complete. lower belly compl. by CN = I mm (on inside scattered molting shafts most prominent on crown & sides of head & neck

2390. scattered (<5%) feath in C+D on all dorsal tracts. thr & side of head with a few C+D - (mostly D), but br. & belly with many C+D - a heavy molt by CN = I mm

62

alpina molt

#1908 - many early summer birds have gray edgings to feathers of dorsal tract, scapulars, upper tail coverts

crown - white with black centers - some at posterior part of crown with buff-pink lateral edges

nape - gray marked with ~~white~~ faint black streaks, grading into reddish of back

mantle, ~~back~~ scapulars (new feathers) - black centers, orange lateral edges, gray tips

rump - + upper tail cov. - 60% new, 40% old - new have same description as mantle above

- old central tail

Throat - white

Superciliary stripe - white

Ear coverts - gray with diffused with buff

Cheeks + sides of neck - whitish with narrow streaks of ~~black~~ black

Throat + breast - white, streaked with black-brown

flanks white

belly - black with narrow ^ [illegible] white tips - + with white bases

vent - white

Under tail coverts - white

#2104. - prim 1-5 = E, #6 = 3/4 C, #7 = B, #8 9 10 = 0

upper p cov 1-5 = E, #6 = 3/4 C, #7 = A, #8-9-10 = 0

no sec. molt - but upper sec. cov. 1-6 = 1/4 C ∴ 0 x 80 [illegible]

white bases to old secondaries - 2 rows up-cov in B + early C stage. Under (prim + sec) wing cov = [illegible] [illegible] rows in A-B

C. algeria molt

#2248 molt in O-C stage in all head tracts. molt seems to be greatly simultaneous.

- starting in capital tract - frontal region progressing back on the head - the dorsal region + cerv reg + humeral tract begun - along with ventral tracts.

2250 · frontal · O-A · just starting. no molt on crown · neck - scap - interscap · dorsal - but O-A on pelvic + on flanks O-A (femoral tract). Small A fea on edge of cervical region of ventral tract - no other head molt nor other ventral molt (i lower tail coverts = O) - Upper tail cov. are M - sev showing A. tail molt is just starting

Upper prim-cov · follow behind their primaries - 1st of p = ½ c - cov. = B. - upper-upper pri cov. now ?? - or A
marginal coverts : O-A.
Greater 2ndary coverts ~~following behind~~ ahead their 2ndary

- next page

Mact

#2250 - continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2nd	E	A	A	A	m	O	O	O	O	O	O	O	O	2/3
gr. cov.	E	——						E	A	A	A	A	A	A

lower cov. surface:
- lesser " O ———— O
- middle lesser " O-A ———— A
- lower lesser A ———— A
- lesser marginal cov O-A ———— O-A

upper cov. surface:
- upper middle sec. cov A ———— A
- next row O ———— O
- " " O ———— O
- marg. covert ———— c
- " ———— c
- " O ———— O
- .. leading edge -A-C ———— A-C

PRIM

	1	2	3	4	5	6	7	8	9	10	11	Alula
	E	——					E	1/2 c	m	O	O	4/5 c
	E	——					E	B	O	O	O	E
upper cov. middle upper	A	——									A	
upper marg. cov	O-A	——										

1 carpal covert : E

- lesser cov O ———— O
- middle lower A ———— A
- marg cov O-A ———— A

molt — C. C.

2284 – O-A on crown – O-B on th. at base / bell. these are only areas where body molt is progressing – so must be first areas to start. Body is very blackish – i.e. not very red & the feathers on the pelvic region (the dorsal spine tract) are mixed gray & red – (age?)

2285 – all under prim. + ~~2nd~~ coverts = B
all under 2nd cov = A.
· upper all feathers – exc ~~[illegible]~~ B-C on marginal coverts

2296 – all upper wing surface molt completed – on lower surface – some marginal cov = C-B. – white ~~[illegible]~~ lower sec & pri coverts = C-B. (all the way to prim #10)

Holmes, R.T.
1964

C. alpina

4 June Barrow, Alaska

Two-three seen behind drum area near AACS. Several (~5) aerial display heard - all consisted only of long trill - no churring heard. 1 feeding with RP, RPs. 1 Pair seen along Elson bluffs - 1 aerial display - with churring heard.

5 June 1 pair on both bluffs, 2 pair on Denali Ridge, 2 ♂♂ - (locally settled - see below) - S of Brittons Area. In the case of the latter birds - one was flushed by the weasel & flew 100', landing about 30' away from another (B). B raised 1 wing toward the new-comer - gave a long trill, then flew & landed 8' from B - & kept both wings vertical for 1-1½ sec - & gave an abbreviated long call. The both fed or at least stabbed at the ground for 10-15 sec - before B took flight toward A - A flew & the chase went until out of sight [low over the tundra. (<3') - in flight the aggressor (B) gave the breep - a softer, less emphatic bleep & a long eeeeeeee which may represent the long trill given by ... in first flight.

3-4 scattered indiv. on Elson bluffs, no. 1 with ... None seen on Pitelka's Plot

6 June Only 1 pair on north beach ridge - also 1 or 2 displays were heard from ... between the ridge & Imikpuk (Fresh) Lake.

On the ridge (white ... sector). The ♂ displayed (15' max. height), landed with a brief wing up. ... several feet

RTH
1964

C. alpina

June 6 Barrow, Alaska
pecking at vegetation but clearly not feeding & then he tipped forward slightly, with tail elevated ½" or so above folded wing tips, walked 6" & settled into a depression, with tail & folded wing tips held high - but after 2 sec, he stepped out - moved 2' & settled again. In this case, he settled in, breast against the bottom, pressed & rotated the breast & body ind the cup, at the same time giving a nasal version of the aerial "kraiaing" - nee, nee, or perhaps teree.- slightly higher in pitch than the aerial note - his bill was open about 3-4mm as the call was given (which was continuously while he was in the cup). The ♀ who was nearby flew 10', landed, ran to the cup, stood next to the ♂, he backed out of the depression, & stood next to it in hunched, tail & wing tip-raised posture - but the ♀ then walked off in a feeding manner. The ♂ resumed normal posture & preened. - then gave an aerial display & flew off. - The cup when checked later was well formed - it had been cleared of grass & the bottom contained only dry Salix leaves.

About 30 min. later, the ♂ appeared again - in the air giving an aerial display - with hovers & long trills - ~~[illegible]~~ (20-50' fluctuation height -) - ♀ flying in low & behind him. She landed

RTH
1969

C. alpina

6 June Barrow, Alaska
The ♂ landed nearby & flyed away at vertical for 2-3 sec. Then giving the ground start till ... above. he ... sev. steps - assumed scraping posture, settled into a cup (about 50' from the other & on a different bare patch), turned & rotated, wagging posterior parts (no scraping seen - all rotating) - all the while giving the relatively soft ree, ree.... The ♀ flew 6' to him, landed, walked up to him, he backed out of cup - she stepped in & then out & went off feeding. - The ♂ resumed normal posture. Appears as if aerial display may bring birds together for this act - since the ♀ appeared soon after the ♂ did & was nearby when he landed for display. The soft call may aid in attracting her. All of these scraping sessions were very brief, lasting only 2-3 sec. - the ♀ responding rapidly. Perhaps the cups are already formed (or at least 1 was) & the early phases of their formation is not seen now.

None seen along Elson bluffs in afternoon.

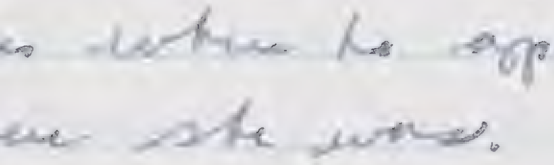
7 June Pair on BR near 0.0 - 2.0 on Pitelka's plot. The ♂ displ. ... - starting off low (5') but increasing altitude (to 20') with each burst of vibration (... ...) - all the while giving the churr notes (100 sec.) - Then he glided

RTH
1964

C. alpina

7 June Barrow, Alaska

back to the ground a [illegible] wings - gave (?) [illegible] wings up at landing - then folded wings - resumed feeding - but moved rapidly as if heading for something in particular. The ♀ who had feeding near where landed, followed behind at about 6'. He went directly to a nest cup - settled in - tail & wings tip up - white undertail coverts conspicuous - rotated but no scraping [illegible] - nor any grass tossing - the ♀ watched around him at about 4' distance - he kept his rear end toward her, except for occasional turns when he apparently looked to see where she was. After about 30 sec she moved off - he stepped out of the cup - fed for about 5 min & then performed a low circle display - flying to 5' - & then gliding down to the ground.



The ♀ followed - both landed & fed.

Perhaps the low flight - incl. vibr. wing beats - & climbing [illegible] & V-shaped [illegible] glide & long [illegible] - [illegible] ♀ following - is involved in pair bond reinforcement. The scrape was bare - no lining - [illegible] (black soil only) - in tall grass-sedge [illegible] mound - near [illegible] center.

RTH
1964

C. alpina

7 June Barrow, Alaska
Much chasing & N. B.R. displays, with at least 3 pairs fr 4 barrels to Wh-v. sector. - 1 NEST with 1 egg, found about 100 yds west of 4 barrels - cup was not well formed - but contains bits of lichen under the 1 egg (i.e. shaped)
8 June Nest contained 2 eggs at 0800 - no sign of adults while I was in area (0830-1130). - i.e. not in attendance.
9 June Nest contained 3 eggs at 1000 - an adult was on the nest when I arrived but flew off when I was 100 yds away & never returned nor "complained" - while I was in the area - eggs were not warm to the touch - although - not very cold either - last night & this morning temps. were below freezing - so the birds may incubate or at least cover eggs at this stage.
3 eggs at 2030.
10 June Nest had 4 eggs - ♂ incubating (at 1000) - gave mild distr. display - (hunched run) (tail fanned).
13 June One pair on N.BR between lab. ant & garden - 1 at nest near 4 barrels. None to the north of the ridge. Very few displays heard today.

Holmes, R.
1964

C. alpina

14 June Barrow, Alaska
Distr. display from birds - with v. scale / blood inj.
15 June Nest found on densely vegetated (grass-sedge) polygon - upland area, 300 yds south of garden ridge - 4 eggs - ♂ incubating.
16 June Sev. indiv. - in wing molt.
21 June Nest with 4 eggs on ridge top where road crosses (east of 4 drums) - in sparsely vegetated cover - shallow cup with grass lining. - eggs collected for egg weights. Nest #1 on ridge still intact
22 June ♀ on nest #1 at 1030.
23 June RBs on Ikroavik plot were not conspicuous. 1 ♂ probably from a nest near 10.2; another near 15.1 & a nest with 4 eggs & incubating ♂ near 24.1 - the nest same cup that has been used by a pair of RB (same?) for 3 consecutive years! Several other birds seen off the plot - all in wing molt.
27 June Nest with 4 eggs & inc. ♀ located on gravelly ridge - NE slope in grassy swale - 70% cover. Eggs removed for weighing; ♀ returned to cup - sat 3-4 times - for sev. seconds - then moved off - only to return - gave several brief long trills. 1 aerial display heard.
♂ on Nest 1 - sat tight until I almost touched it & then - violent d.d.

Holmes, 1964

C. alpina

29 June Barrow, Alaska
Nest on broad ridge · west 14 drums. - 1 egg beginning to pip, both adults present + giving "thug" call.

30 June Nest at 1130. - 1 chick halfway out 1 egg - other 2 with shell cracking - 4th not yet cracking. 1 Ad. in attendance.

1 July Nest with 2 downy young - Ad nearby - other two young were probably present in the vicinity. Ad. excited - gave [illegible] call + short version of the long trill. In afternoon, the 2 young were out of the nest-cup.

2 July Ads + young - [illegible] - not seen or found.

1964

C. alpina

27 June Barrow, Alaska

Maclean 242 . 61.2g

1st year 1→3 = E, 4 = D, 5 = $\frac{2}{3}$ c, 6 = $\frac{1}{2}$ c

·old primaries + all rectrices very worn

b, ll = 35 mm

8809 R.